NOVEMBER 2, 1959

PAPER TRADE JOURNAL

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limelights nuclear energy for low cost power and heat in the paper industry, numerous other papers at 14th annual meeting.

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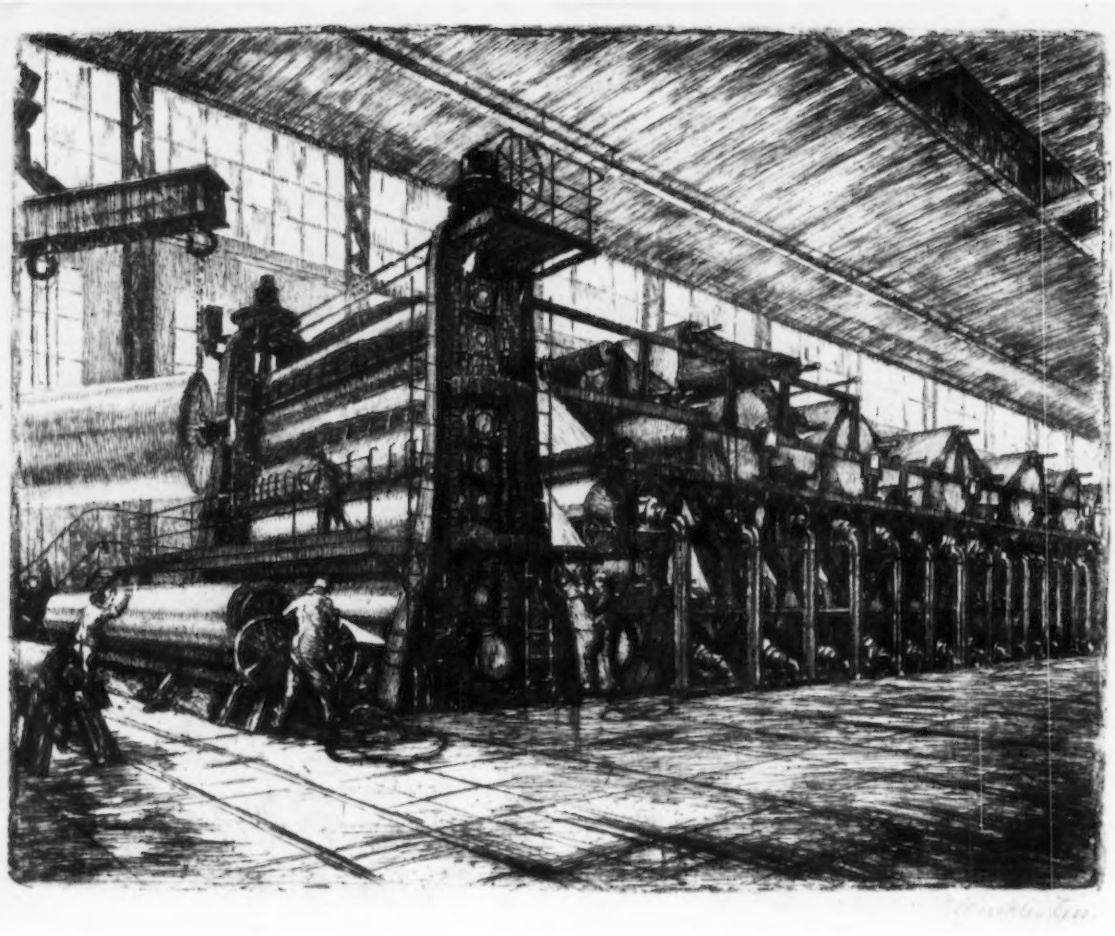

"Dry End" Original etching by Paul Winkler-Leers from the Asten-Hill collection.

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Burd & Fletcher Co., Kansas City, Mo., report

"Cities Service Pacemaker 42 Wax gives best results, bar none"...

Burd & Fletcher Company originally started in 1886 as a printing company and then progressed to boxmaking. By 1936 they were producing as many as 2,000,000 boxes a day. Now, Burd & Fletcher is one of the largest paper box manufacturers in the Midwest area, using several hundred tons of paperboard each month.

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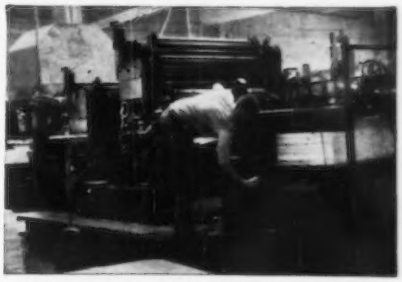

Seventy Years Ago Burd & Fletcher used a far smaller press compared to this high-speed giant. When the firm started in 1886, their prime business was printing catalogues.

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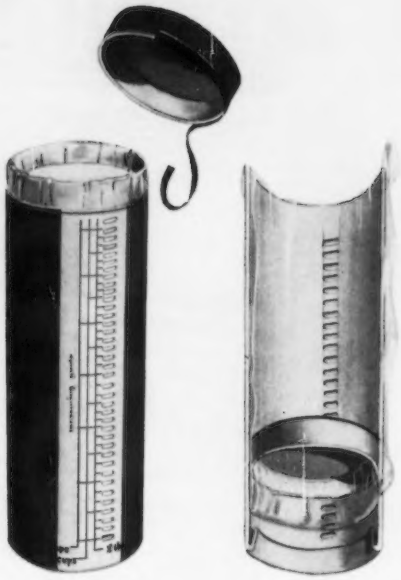

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PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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Week of NOVEMBER 2, 1959—Vol. 143, No. 44

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How special cutters are used to remove excess lumber from boards and make it into valuable chips.

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REMEMBER THESE DATES

November 9-11. National Paperboard Ass'n., Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.

December 1-2. National Council for Stream Improvement, Inc., Pulp and Paper Industrial Waste Conference, Edgewater Beach Hotel, Chicago, Ill.

January 26-29. Technical Section, Canadian Pulp and Paper Ass'n., Queen Elizabeth Hotel, Montreal. Note meeting starts Tuesday.

February 22-25. Paper Week in New York.

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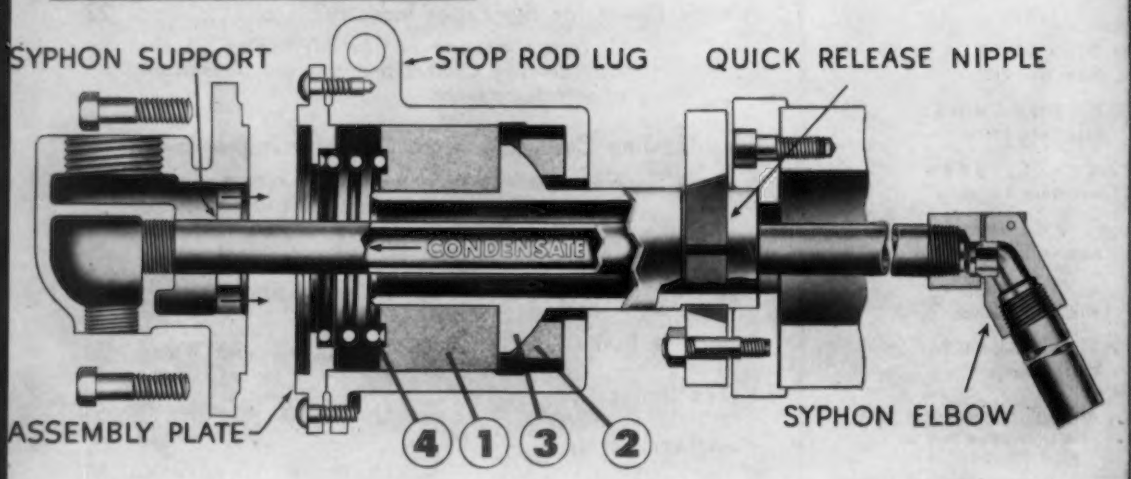
SUPER Type SBP Johnson Joint with "Quick Release" Nipple

for Paper Machines . . . . with STATIONARY Syphon Pipes



Only 4 Internal Parts

This simplicity of construction means fewer breeding places for trouble. The SUPER construction—which features rock-hard "Green Streak" seal rings and special Ni-Chrome plating—reduces friction and wear importantly. The "Quick Release" Nipple makes mounting, or inspection, a one-man one-wrench operation. The Syphon Elbow ends all the troubles of the unwieldy curved syphon pipes—hinges to pass right through the joint.

Like all Type S Johnson Joints, the Type SBP is completely self-supporting—needs no external supports of any kind. All in all it is a good example of why Johnson Joints are first choice in the paper industry. Type S Johnson Joints are available in sizes from ¼" through 4", for both through-flow and stationary syphon pipe applications.

FREE TRIAL—*We'll gladly furnish a pair of Johnson Joints for 90-day trial in your own mill. Write for information.*

1. **GUIDE**—Makes the joint self-supporting. It is of self-lubricating long-wearing carbon-graphite.
2. **SEAL RING**—Also of carbon-graphite. Eliminates all packing and requires no lubrication.
3. **NIPPLE**—Rotates with the roll, and seals against the ring.
4. **SPRING**—Serves for initial seating only. In operation joint is pressure-sealed.

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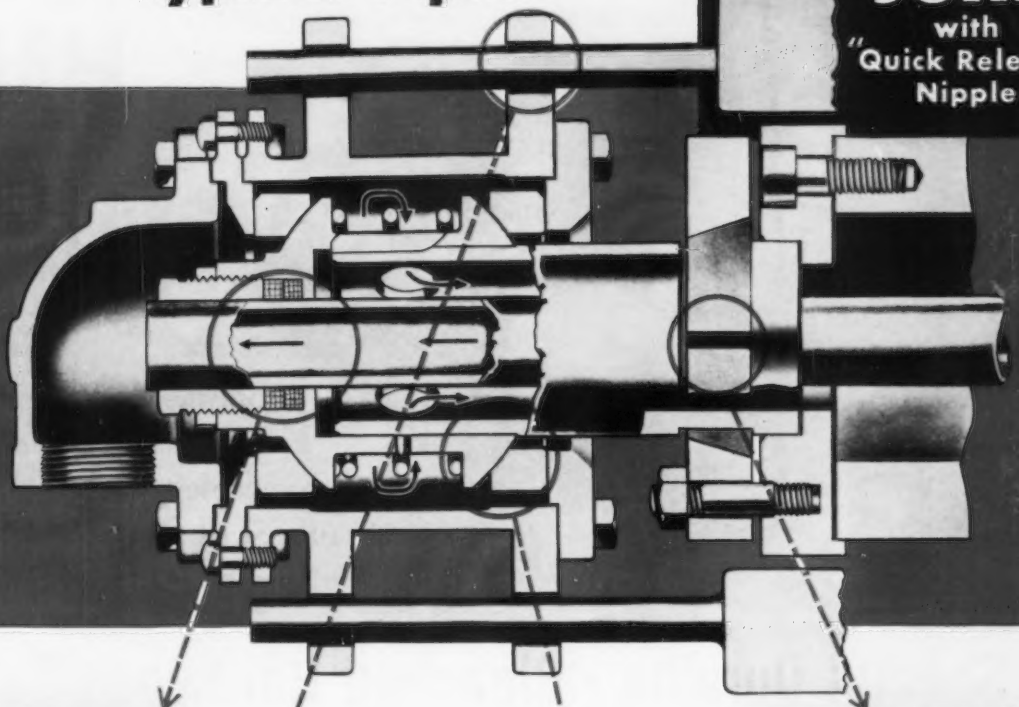
Rotary Pressure Joints • Direct Operated Solenoid Valves

. . . and for Paper Machines with ROTATING Syphon Pipes

SUPER Type L-N

Johnson Joint

with "Quick Release" Nipple



Best Design Yet

Rotating syphon pipe does not rotate in the packing; thrust collar, nipple, packing gland and syphon pipe all rotate together as a unit. Joint needs no lubrication or adjustment. Time-proved construction has only a few simple parts—a design which thwarts trouble, permits easier field servicing. Assembly plate provides ready access to syphon pipe. Type L-N Johnson Joints are available in sizes from ½" through 8".

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Teams "Green Streak" seal rings, of much harder and denser structure, with Ni-Chrome plating on wearing surfaces. Results: Considerable reduction in friction load and much longer service life.

Write for Literature

Bulletin S—Johnson Joints for use with both through-flow and stationary syphon pipe applications.

Bulletin N—Johnson Joints for use with rotating syphon pipe.

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"U.S." coverings are selected because of their performance on large, fast machines. These rolls have resilience, uniform hardness, smoothness of grain built into them. They give the right finish to pulp products, always "run clean" and do not pick up fibre.

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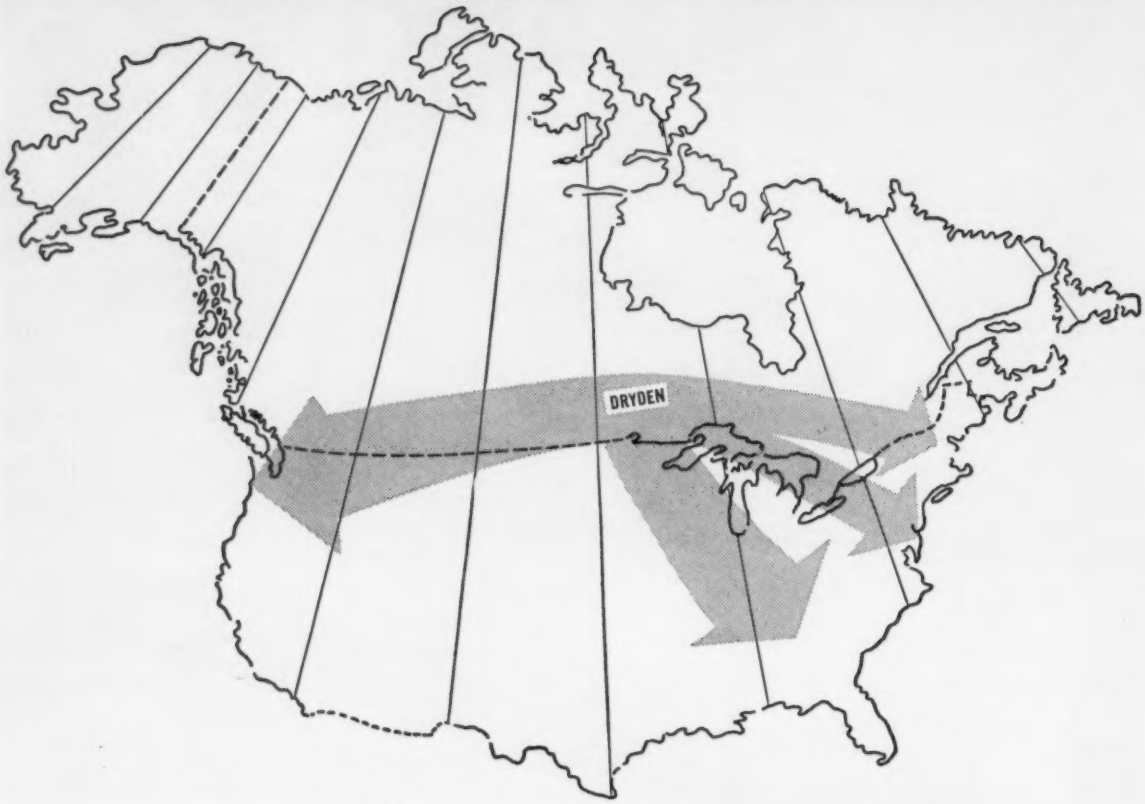

Dryden has long been known for its efficient Traffic Department...always ready to ship on a few hours' notice. And the shipments get to our customers in record time, because of Dryden's strategic location and proximity to major rail, highway and water routes.

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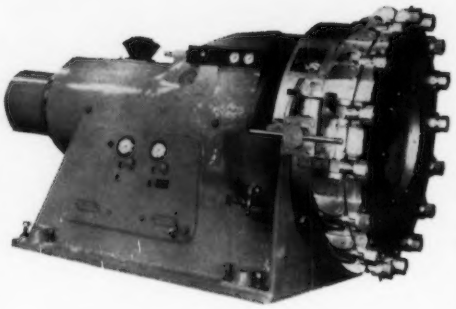
American Defibrator, Inc., offers equipment to meet various demands for continuous pulping of cellulose raw materials. Complete units or components are available for economical production of controlled grades of pulp for the Paper, Wallboard and Roofing Felt Industries.

American Defibrator Continuous Digesters with Screw Feeders or Rotary Feeders and Asplund Defibrators produce pulp at substantial savings in production cost. The capacity of the Defibrator Continuous Digesters ranges from 50 to 250 tons of pulp per day or more. Various raw materials may be used, such as softwood, hardwood, cotton linters or bagasse.

Non-chemical high yield pulps produced by the Asplund Defibrator are used for the manufacture of hardboard, insulating board and roofing felt. Semi-chemical pulps for corrugating medium as well as bleachable grades and pulp for newsprint furnish are also produced by the Defibrator Continuous Digester.

The large size Type D-42 Defibrator is now available and has been developed to meet the current trend in the Pulp and Paper Industry towards larger production units. This Defibrator is driven by an electric motor directly connected to the main shaft by a gear coupling. The grinding pressure is hydraulically controlled and easily adjusted. Therefore uniform, high quality pulp is produced and D-42 units now in operation indicate capacity of about 100 tons/day of non-chemical and 200 or more tons/day of semi-chemical pulp.



TYPE D-42 Defibrator

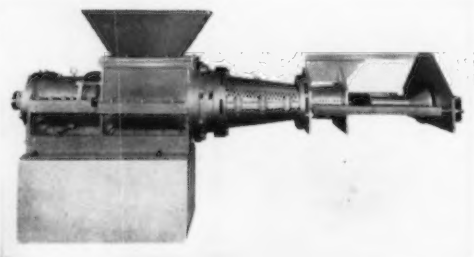
ASPHALT DISPERSION PROCESS

The Asplund Defibrator for treatment of waste paper stock in the "A-D" system has found an extensive application in the Paper Board Industry in order to disperse asphalt, waxes and similar materials in the waste paper. As a result, a clean and sterile sheet is made on the paper machine at considerable savings, since less expensive waste paper can be utilized. Processing costs for steam, power, labor and maintenance are low. No chemicals are required. Total annual capacity installed now exceeds 1½ million tons of waste paper. Inquiries receive prompt attention.

Continuous Dewatering

THE DEFIBRATOR BARK PRESS

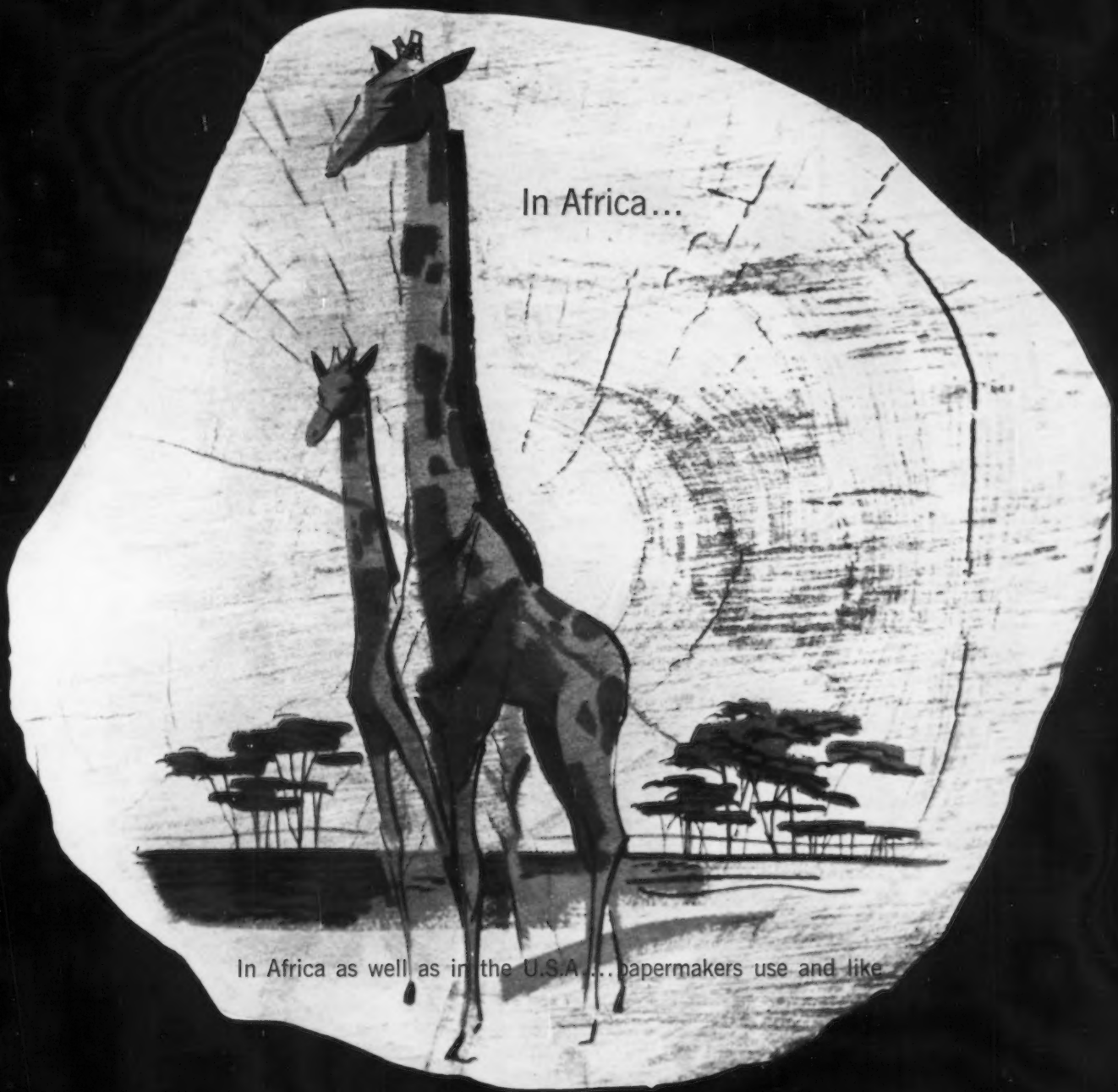
The Defibrator Bark Press was developed for continuous dewatering of bark for use as fuel. Processing capacity is about 4 to 5 tons per hour, bone-dry basis. The power consumption at this rate runs between 60 and 75 H.P. The continuous operation reduces labor and maintenance costs to a minimum.



THE DAVENPORT DEWATERING PRESS

The Davenport Continuous Press extracts water from fibrous materials, such as various grades of waste paper stock, kraft, sulphite or groundwood pulp. The Model 1B Press has a capacity of about 75 tons/24 hours of pulp, bone-dry basis, dewatering the stock from about 10% consistency to about 35% consistency or higher. The wet pulp entering the press is squeezed and dewatered as it passes through the press and the squeezed out water escapes through the screen plates and drains off at the bottom of the press. There are practically no fiber losses. The pulp is handled very gently by the press which operates at low speed. Therefore, no "fish eyes" are formed in the pulp during the dewatering. The Davenport Press operates very efficiently with low power consumption, high capacity and low maintenance cost. Inquiries receive prompt attention.

AMERICAN DEFIBRATOR, INC. CHRYSLER BUILDING NEW YORK 17, N. Y. West Coast: A. H. Lundberg Mercer Island, Washington



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GRINNELL
PREFABRICATED PIPING

Trends

First 9 Months P & B Production Up 12.4%

Paper and board production for the first nine months of this year, as estimated by APPA, totaled 25.4 million tons, an increase of 12.4% above the comparative nine month period last year. Paper production was 11.1 million tons, an increase of 11.3%; paperboard production was 11.8 million tons, an increase of 13.0%, and construction paper and board was 2.5 million tons, an increase amounting to 14.4%.

Newsprint Consumption and Production Sets Records

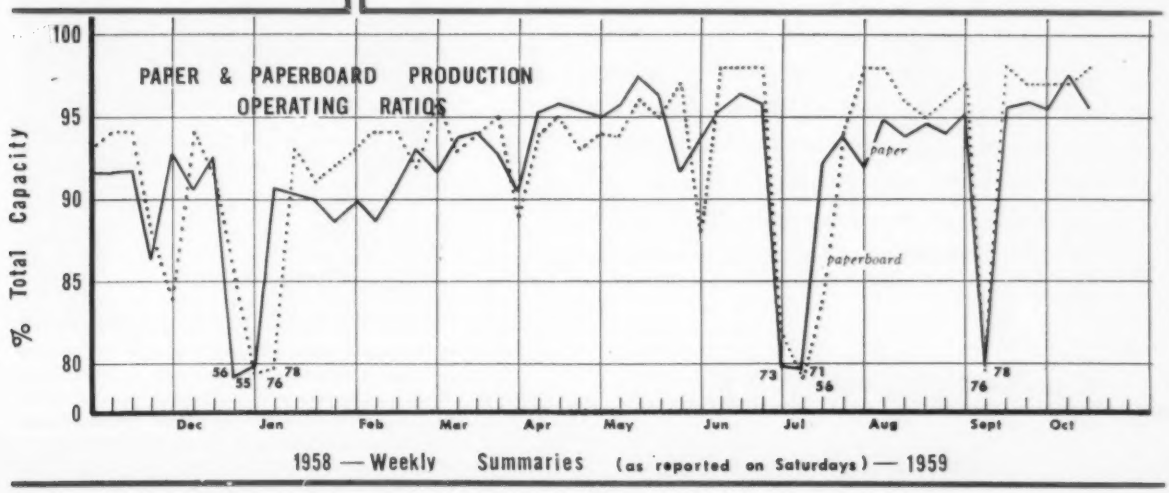
U.S. newsprint consumption continues to set new records with a new September high (8.7% over September 1958) and a record high for the first nine months which was 7.4% over the same period last year. North American newsprint production in September was 12.8% greater than the same month a year ago, while output for the first nine months was up 4.9% over last year.

Canada Still Best U. S. Customer

Canada still heads the list as our best customer, with Mexico running second, according to a study of exports and imports for 1957 and 1958 by National Council of American Importers. On a per capita basis, the United States buys much less from other countries than they buy from us. For example, Canada bought $196.23 worth of our goods per person last year while we bought Canadian goods worth only $15.37 per person. Mexico jumped from sixth position in 1957 to second position in 1958 as a buyer of U.S. goods. This was because the drop in U.S. exports to that country was very slight in comparison with the drop to most other countries.

Folding Boxes Show Dollar Gain in Sept.

Folding box shipment value during September was above a year ago by 1.4%. Volume amounted to $82,300,000, a million dollars over the same month last year. At the same time tonnage slipped 0.3% from September of 1958. Dollar volume for the third quarter was up 1.6% over the previous quarter, and 2.3% over the third quarter of last year. Dollar volume for nine months through September exceeded 1958 levels by 3.6% and tonnage was up 2.5%.



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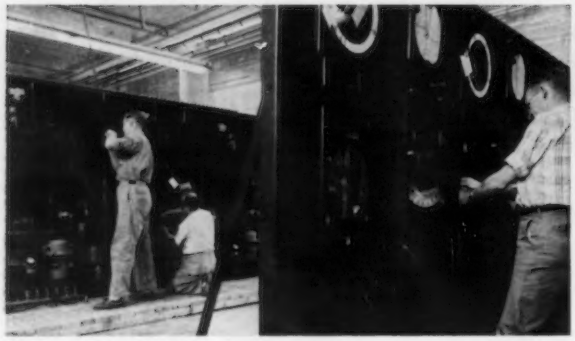

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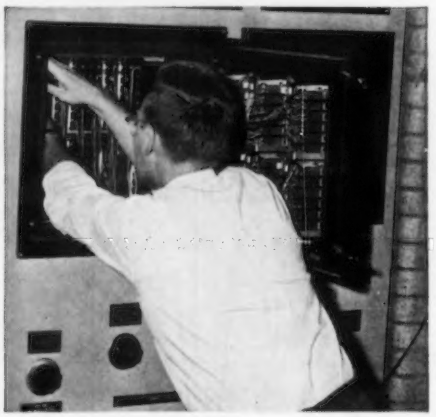
3. No Installation Headaches. We will contract to completely install instrumentation. Honeywell technicians will perform the prestart-up check out and deliver an operating control system to you. You get installation plus peak performance from your control system in the least possible time.

Honeywell offers you far more than just instruments. You can get all or any part of these time and money-savers. Add to these services our many years of engineering and application know-how. You'll see why Honeywell is your best buy in pulp and paper instrumentation, whether you deal directly with us or through your consultant or contractor.



4. No Unscheduled Downtime. We can provide periodic maintenance by experienced service engineers—a big help in eliminating unscheduled downtime. Your instrument technicians are welcome at our Instrumentation Education Center in Philadelphia, where they receive free, expert training in the operation and maintenance of our products.

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H HONEYWELL *First in Control*

of 532,838 tons while shipments totaled 560,554 tons, which represents

PTJ PAPER TRADE JOURNAL

WEEK OF NOVEMBER 2, 1959

C-Z of Canada Floats Chips Down River in a Plastic Ball

An experiment which could enable B.C. interior sawmills and plywood plants to achieve fuller utilization and to derive revenue from wood now being wasted is being conducted by Crown Zellerbach Canada, Ltd. Taking the lead from log drives down the Fraser River, men of Crown Zellerbach Canada's wood supply department are currently experimenting with a red fiber glass ball as an economic means of transporting pulpwood chips to the coast.

The company now gets chips for its pulp and paper mills at Ocean Falls and Elk Falls from a number of independent coastal sawmills, and its own Canadian Western Lumber division at Fraser Mills, Bridge Lumber division in Richmond, and its small log sawmill at Elk Falls.

The eight-foot diameter sphere—which the company stressed was an experimental prototype—was filled with about 1¼ units of chips (about 250 cubic feet) and released in the Fraser River at Boston Bar September 29. The ball floated some 50 miles down the river, through swirling Hell's Gate, and was picked up just below Hope, by prior arrangement, by Canyon Log Drive and Booming Co. The ball was bruised, but the chips completely dry.

Later, it was released at Quesnel to try a 300 mile downriver run to Hope. It grounded on a sandbar about 50 miles downstream near Soda Creek. Further similar runs are planned.

The prototype was built to a design worked out by Hugh Hodgins, C. Z. Canada timber vice president and E. Pedersen, wood supply department manager. Experimental runs were handled by Angus Stewart and George Pearson of C. Z.

The sphere is made of one-eighth inch fiberglass, painted red for ease of visual observation. It was fabricated in quarters, two being joined to form fixed halves. These semi-spheres are flanged to give strength and to permit the two halves to be nested for handling and transportation on land. The halves are joined by steel bolts. Weight empty is about 200 pounds. One half has an 18-inch diameter hatchway for loading and unloading the chips.

Further experiments, possibly using different materials, shapes and sizes, are contemplated.

Schweitzer Closes Down Jersey City Mill

The Peter J. Schweitzer Paper Co., division of Kimberly-Clark Corp., has closed down its paper mill at Jersey City, N. J. This two machine mill produced lightweight papers such as carbon and condenser tissue.

Flagstaff Pulp Mill To be Reactivated

Plans are reported underway for a pulp and paper mill in Flagstaff, Ariz., to be operated by a "major pulp and paper company." The plant would be located on the site of the idle Arizona Pulp & Paper Co. Negotiations are underway for acquisition of this 40 ton per day mill.

Carolina Not Acquiring Bancroft Mills

Carolina Paper Mills Corp. is not acquiring the Bancroft tissue mill in Becket, Mass., as was reported here last week. The new owners are important principals in Carolina Paper Mills but there is no direct relationship between the two companies. Our report that Carolina would convert the Bancroft output has been denied.

Paper and Board Production

According to the American Paper and Pulp Ass'n. the ratio of the United States production to mill capacity for the week ending Oct. 17, 1959, was 95.5 per cent compared with 98.3 per cent revised for the preceding week. The ratio was 92.1 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending Oct. 17, 1959, was 98 per cent compared with 98 per cent for the preceding week and 95 per cent for the corresponding week a year ago.

(Detailed statistics on page 54)

FIRST PHASE of the lift operation at Hammermill Paper Co.

Helicopter Helps Speed Construction

A chip cyclone was lifted into position atop the digester building of the sulphite mill at Hammermill Paper Co., Erie, Pa., by a helicopter to speed plant construction by The Rust Engineering Co. The 7-foot diameter and 10-foot high cyclone weighing 2600 pounds was lifted in two sections. The helicopter first picked up and removed an existing cyclone (in three sections) from the roof top 110 feet above the ground.

Because of the high elevation of the cyclone on top of the digester building, it was impossible to set the cyclone with a crane. Elaborate rigging and framing would have been required to lift the equipment into position.

Rust estimated the hiring cost of a helicopter to be less than half of the cost of erection by conventional construction methods.

A Sikorsky S-58 helicopter of Petroleum Helicopter, Inc., Lafayette, La., made the lifts.

Hercules Powder Dedicates Patent to Free Use

Hercules Powder Co. has announced that it is dedicating its U.S. Patent No. 2,478,379 to free use by anyone.

This patent relates to a process of inhibiting cellulose degradation during chlorine bleaching in an aqueous acidic medium in the presence of free chlorine and a small amount of a nitrogen-containing compound, such as ammonia and amines, as the inhibitor. Although the patented process has been used successfully by Hercules on a commercial scale for quite some time, Hercules dedicated the patent to the free use of the public to encourage its use to even a greater extent in the paper field.

Production of Newsprint Reaches Record Peak

Production of newsprint in North America during September 1959 amounted to 682,022 tons—a record high for this month—and was 8.6 per cent above the September 1958 volume. Shipments totaled 716,172 tons in September 1959 and were 12.8 per cent greater than shipments in the comparable month of 1958. According to the Newsprint Service Bureau, output in the United States of 149,184 tons represented the largest volume of any September on record while shipments totaled 155,618 tons, and respective gains over September, 1958 amounted to 8.7 per cent and 11.4 per cent. Canadian production attained an all-time September peak of 532,838 tons while shipments totaled 560,554 tons, which represents increases from September 1958 of 8.6 per cent and 13.2 per cent respectively.

Production of newsprint paper in North America in the first nine months of 1959 amounted to 6,149,841 tons, which was 286,966 tons or 4.9 per cent above the level attained in the same period of 1958. Cumulative output of United States mills at the end of September, 1959 totaled 1,450,623 tons—an all-time high for this period—and was 144,862 tons or 11.1 per cent more than the volume produced a year earlier. Canadian production amounted to 4,699,218 tons and was 142,104 tons or 3.1 per cent greater than in the first nine months of 1958.

North American manufacturers' stocks on September 30, 1959 aggregated 228,860 tons compared with 263,010 tons on the last day of the preceding month and 245,915 tons at the end of September, 1958. The continental total was composed of 21,331 tons and 207,529 tons held by United States and Canadian mills respectively, and inventories were lower than a year ago by 1,262 tons in the former instance and by 15,793 tons in the latter.

Newsprint Consumption Hits New High

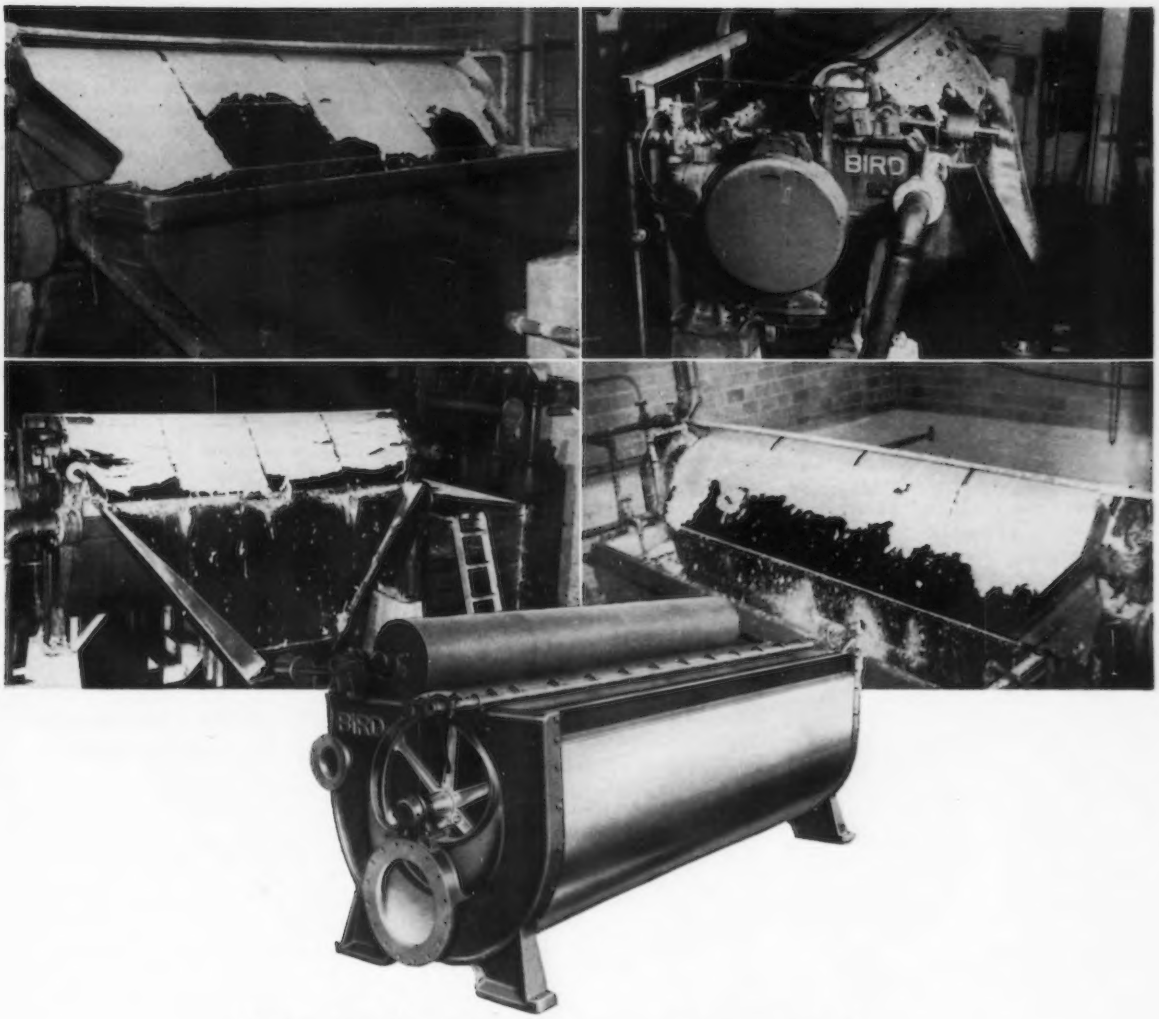
U. S. newsprint consumption continues to set new records with a new September high and a record high for the first nine months.

Newspapers reporting to the American Newspaper Publishers Association consumed 448,999 tons of newsprint in September, 1959, an increase of 8.7 per cent over the 412,984 tons for September, 1958 and 3.4 per cent over the September, 1957 consumption of 434,282 tons. There were four Sundays in each September, 1959 and five Sundays in September, 1957.

ANPA reporting newspapers consumed 3,888,869 tons of newsprint in first nine months of 1959, an increase of 7.4 per cent over the 3,620,533 tons consumed in first nine months of 1958 and 2.5 per cent over the 3,794,390 tons used in corresponding period 1957.

Estimated total U. S. consumption for September, 1959 was 598,666 tons compared with 550,645 tons in September, 1958 and 575,208 tons in September, 1957.

Estimated total U. S. consumption for first nine months of 1959 was 5,185,159 tons, compared with 4,827,377 tons in the 1958 period, and 5,025,682 tons in the 1957 period.



Simplest, surest way to get white water out of the red

There's no need to stand by while good fibres and filler go down the drain. Bird Save-Alls recover and return them to the machine chest in perfect shape for immediate delivery to the machine wire. What's more, Bird Save-Alls do the job at *lowest cost per ton.*

Capacity ranges from 200 to 750 gallons of white water per Save-All per minute. Let us show you how quickly a Bird Save-All can pay for itself in your mill.

BIRD MACHINE COMPANY

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CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

BIRD MACHINE'S 50th YEAR OF SERVICE TO INDUSTRY

Recent Market Outlook Studies On Pulp, Paper and Board Issued

Owing to the rapidly growing world demand for paper and allied products, government and government-sponsored organizations recently have prepared three long-term outlook studies on pulp, paper, paperboard, and related products. These reports contain basic data useful in planning expansion programs and estimating requirements of native fibrous raw materials, principally pulpwood, to meet future needs.

Delegates to the September 1959 World Consultation on Pulp and Paper Demand, Supply and Trade reviewed a new study on "Meeting Future Needs," prepared under the auspices of the Food and Agriculture Organization of the United Nations. This comprehensive report dealt with the supply-demand prospects for paper and allied products in future years and estimated world demand for paper and board at 148 million short tons in 1975, about twice that of 1958.

The Organization for European Economic Cooperation, in June 1959, approved for publication a detailed study, "The Economic Situation in the Pulp and Paper Sector in Europe." This study includes an analysis of paper and board demand through the year 1965 for the Western European countries. The OEEC utilized in its report the projection techniques developed in the U.S. Department of Commerce study prepared in 1957 on United States "Pulp, Paper, and Board Supply-Demand."

The Supply-Demand report prepared by Forest Products Division, Business and Defense Services Administration, was the first study ever prepared by the U.S. Department of Commerce for public use which analyzed projected future supply and demand in terms of principal products for one of the Nation's major manufacturing industries.

Entitled "Pulp, Paper and Board Supply-Demand," the Commerce Department study treats pulpwood, wood pulp, other fibrous materials, and paper and board by major grade groups through the year 1965. Two supplements to the basic report have been issued, one each in 1958 and 1959, showing the relationship of projections to actual production and consumption.

The 1957 and 1958 issues of the Pulp, Paper and Board Supply-Demand Report are available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C. Price: 1957 issue (House Report No. 573), 60 cents; 1958 issue (House Report No. 1868), 20 cents. The 1959 supplement is available from the Subcommittee on Commerce and Finance, Committee on Interstate and Foreign Commerce, House of Representatives, Washington 25, D. C.

Plans for Future Activities in Applied Chemistry Discussed at Munich Meeting

On August 27, 1959, the Pulp, Paper and Board Division of the Applied Chemistry Section of the International Union of Pure and Applied Chemistry met in Munich to discuss plans for future activities. The new officers and members of the Committee are as follows:

Chairman—Dr. W. Gallay, The E. B. Eddy Co., Hull P.Q. (Canada); vice-chairman — Prof. W. Jensen, Finnish Pulp and Paper Research Institute, Helsinki (Finland); secretary—Dr. Kyle Ward, Jr., The Institute of Paper Chemistry, Appleton, Wisconsin (USA).

Members—Dr. H. F. Rance, Wiggins-Teape Group Research Organization, Butler's Court, Beaconfield, Bucks., (Great Britain); Miss Karin Wilson, Cellulose Research Laboratory, Uddeholms Aktiebolag, Skoghallsverken, Uddeholm (Sweden); Prof. G. Jayme, Institute for Cellulose Chemistry, Alexanderstr. 24, Darmstadt (Federal Republic of Western Germany); Prof. J. P. Vilars, Société Nouvelle de Papeterie, Corbeil-Essonnes, Seine-et-Oise (France); Prof. G. Centola, director, Stazione sperimentale per la Cellulosa, Carta e Fibre Tessili vegetali ed artificiali, Piazza Leonardo da Vinci, 26, Milan (Italie).

At this meeting Dr. Rance was represented by I. Hendry and Professor Jayme By Dr. R. Schepp. Guests at the meeting were Dr. P. O. Bethge of Sweden and Professor W. Brecht of Germany. The function of this division is to establish and promote co-operation between the national societies of the member countries concerned with the pulp, paper and board field and to help co-ordinate their scientific and technical activities.

At the meeting in Munich, the committee made plans, keeping in mind its function as a clearing house for the dissemination of information on an international level. As one field of activity the existing International Committee for Cellulose Analysis was established as a commission of the Pulp, Paper and Board Division. The officers and governing body of the ICCA are in agreement with this move and there is overlapping membership on the boards of both organizations. The feasibility of a similar commission dealing with the chemical analysis of paper is being explored.

One previous activity of the division has been the standardization of publication practices, and it was decided to continue these efforts. Various other projects now being considered are a directory of current research projects on a world-wide basis, the question of varying international nomenclature, and the arrangement of an international symposium on the chemistry of wood to be held in 1961 at a location as yet undetermined.

Ecusta Adds Lightweight Paper to Waylite Line

Development of a lightweight paper under 20 pounds for letterpress printing was announced by Ecusta Paper Products, Pisgah Forest, N. C.

The paper, which has a basis weight of 17¼ pounds and uses a kraft pulp furnish is the latest addition to the company's Waylite line of fine papers. It was developed in response to demand from Bible and handbook publishers who have been using Ecusta's 20-pound paper successfully. Ecusta describes the new paper as "a significant breakthrough in the industry's campaign to reduce package weight and bulk in the face of increased mailing rates and shipping costs."

A survey by Ecusta has indicated that present markets for lightweight paper will continue to expand and new markets will open. Currently, the lightweight papers are used mainly for direct mail advertising, catalogues, Bibles, textbooks, annual reports, and proxy statements.

French Papermill Cancels U.S. Investment Invitation

The president of Papeteries de la Chapelle, 104 avenue des Champs Elysees, Paris, has informed the Department of Commerce that the firm is not interested in U.S. collaboration or financial participation, contrary to previous announcement.

The Beloit Album

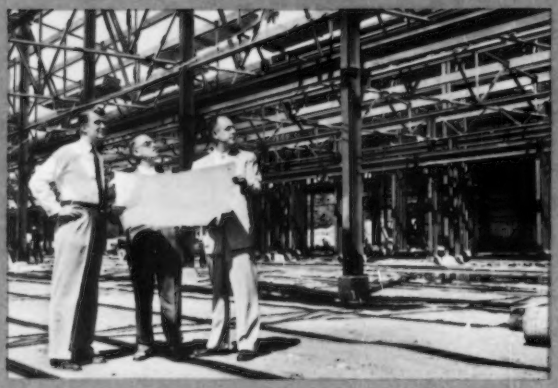
NOVEMBER, 1959

TWO PAST PRESIDENTS OF TAPPI recently visited Beloit: G. W. E. Nicholson *(left)* president, Tennessee River Pulp and Paper Co., and K. O. Elderkin *(right)* president, Bowaters Engineering and Development Inc. They are pictured with Beloit's chairman, E. H. Neese. Past, present, and future papermaking techniques were among the topics discussed.

MINNESOTA AND ONTARIO PAPER COMPANY's paper machine superintendent, L. A. Evenson *(l)* and general superintendent, paper, N. L. Jurgensen, hold a discussion beside the new Beloit 158" publication grade machine at International Falls, Minnesota.

THE CRYSTAL TISSUE COMPANY's vice president, manufacturing, John Burdsall *(c)* discusses slice assembly on erecting floor with Fay Mills *(l)* and Pete Jerardi, Beloit's Ohio representative.

THAMES BOARD MILLS LTD.'s William King *(c)* and S. J. Wright *(r)* visited Beloit during their recent American tour. Beloit's E.N. Glauner, Jr. reviewed suction roll packing arrangements with them.



CONSTRUCTION PROGRESS at Pittsfield is reviewed in one of the machine shop bays by Jones Corp. executives: *(l to r)* William Sorenson (Beloit) plant engineer, Dwight Jones, executive v. p., D. W. Curtis, assistant to president.

ROOF TRUSSES frame steelworkers on the new plant scheduled for occupancy in 1960. Shop and erecting bays are high and wide for greatest efficiency. Modern system of fluorescent lighting will illuminate windowless shops.

E. D. JONES CORP., Pittsfield, Massachusetts, adds new products, facilities to "the Beloit Group"

"Turn-key" mills—complete from pulping to finished sets—were made available to Beloit customers last year when E. D. Jones Corp., Pittsfield, Mass., became a member of the Beloit Group. The Jones line of pulp and stock-preparation equipment, in wide use throughout the papermaking world, is now offered in conjunction with the high-speed, high-production paper machinery with which Beloit has equipped leading mills for over a century.

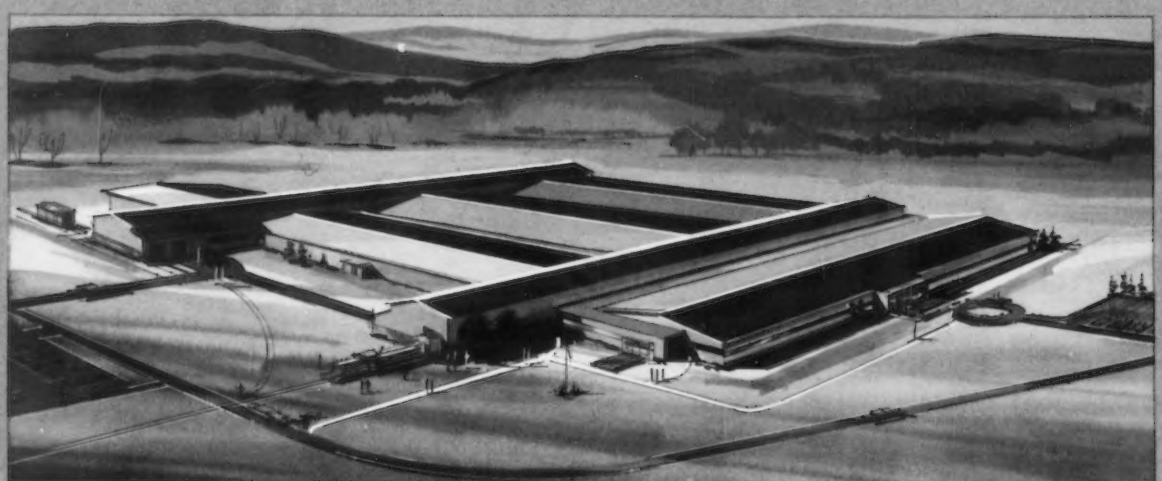
The Jones organization, founded in 1845, is one of the few industrial concerns in the U. S. which has been in continuous operation by the same family for more than 100 years.

Completion of the modern plant at Pittsfield, scheduled for occupancy early in the first quarter of 1960, will double present Jones manufacturing facilities and is expected to quadruple production capacity. Plant area has been engineered to permit future expansion up to 640,000 square feet. Correlated activity of the Beloit and Jones organizations makes the Beloit Group more effective than ever as "your partner in papermaking."

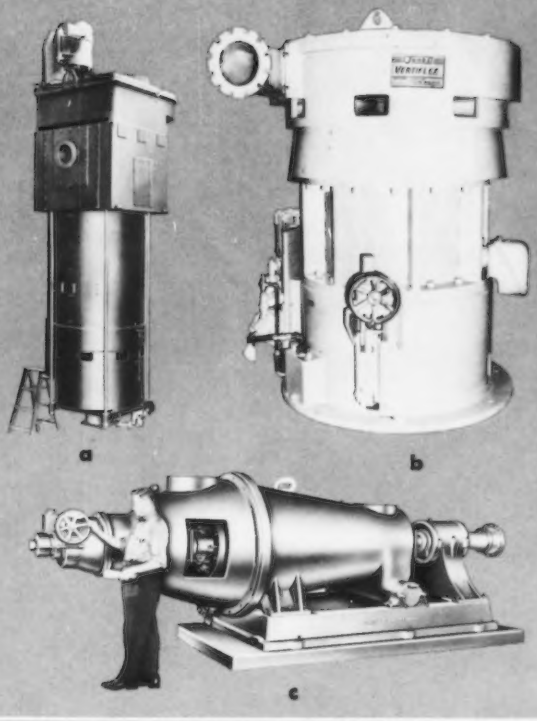
* * *

Jones Pulp Mill equipment: Vertiflex chip shredders and primary refiners—Condi continuous digestion systems for all types of pulp—Zenith dewatering presses—Berkshire hot stock refiners—Condi asphalt dispersion systems.

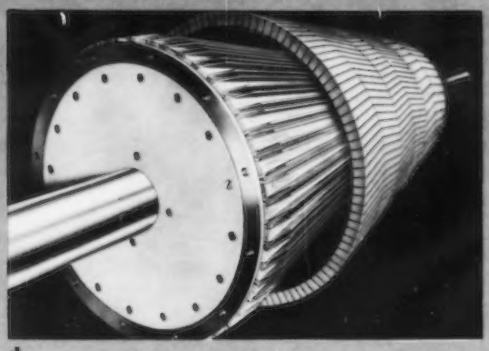
Jones Stock Preparation equipment: Hi-Lo, Pulpmaster, Liebeck and Turboflex pulpers—Jones high-production beating units and washers—Midget, #1, Stockmaster, Fibremaster, Royal, Imperial, Majestic and Leviathan jordans—Berkshire hi-angle conical refiners—Double-D and Vertiflex disc refiners—Jones vacuum and flotation savealls—custom-designed stock chests and agitators.



200,000 SQ FT will be available in E. D. Jones Corp. plant now under construction at Pittsfield. Fabricating and machine shops connect erecting floor *(l)* with receiving and storage bay *(r)*. Plant has complete rail and truck shipping-receiving facilities. Switch tracks lead directly to main line of New York Central railroad. Massachusetts Turnpike is only a few miles away.



Extensive Jones line of pulp mill equipment and stock preparation machinery includes: **a**, Zenith 020 dewatering press with floating cone; **b**, Vertiflex single disc refiner for chip shredding and primary defibering; **c**, Leviathan Jordan; **d**, Jones "Adapta-Plug" and "Fulbar" one-piece shell filling.



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E. D. JONES CORP. BELOIT PITTSFIELD MASS.

Jones

PULP MILL EQUIPMENT AND STOCK PREPARATION MACHINERY

NEARLY COMPLETED HEAVY MACHINE SHOP, with erecting floor footings appearing in the foreground.

BRIDGE CRANE is eased into position in light machine shop. Crane is one of 15 being installed to serve shops.

SHIPPING AREA at end of erecting floor takes shape as workmen pour forms. Woodshop will be located to the left.

your partner in papermaking

BELOIT

PAPER MACHINERY

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS. U.S.A.

S. R. Christensen.

EXTENSIBLE UNIT, recently installed on #1 machine at International Paper Company's Southern Kraft Division Mill at Camden, Arkansas, produces the dramatic new CLUPAK* papers. Camden mill manager Albert Rozyskie (*l*) and paper mill superintendent R. M. Miles, are shown at the unit's control console. CLUPAK, Inc. has appointed Beloit to build extensible units under patents owned by CLUPAK, Inc. Several highly successful commercial installations have been made; additional units are on order. The patented process whereby CLUPAK paper is made brings a new dimension to paper-engineered stress and strain properties. While the process to date has been limited to kraft, principles of manufacture and characteristics are applicable to all grades.

*CLUPAK, Inc.'s trade-mark for extensible paper manufactured under its authority.

your partner in papermaking

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS. U.S.A.

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE

BELOIT

PAPER MACHINERY

Printed in U. S. A.

PTJ

NEWS OF CONVERTERS

Arnold Greenfield

Kurt Franck

Two-Day Production Seminar Held By Business Forms Institute

A successful two-day production seminar conducted by the Business Forms Institute, in which more than 80 persons representing BFI member companies, other manifold business forms producers, and several suppliers participated, was held at the Savoy-Hilton Hotel, New York City, October 15-16. The seminar was one of a series held by and on behalf of the BFI, its members and the forms industry.

Arnold Greenfield, vice president, Alfred Allen Watts Co., Inc., Clifton, N. J., was chairman of the seminar which covered a wide range of subjects in production, including a variety of problems and methods of solving them. More than 20 talks were given by industry specialists, with answers to questions provided by panels equipped to do so after each set of talks.

METHODS ENGINEERING

The "Why" of Methods Engineering opened the BFI seminar on October 15 with three executives of Moore Business Forms, Inc., reading papers and projecting a short movie. J. E. Verral, general production manager at Niagara Falls, N. Y., emphasized the need to develop a questioning attitude, in short, the "Why" of any given procedure. This asking and listening technique, he said, develops leadership and, therefore, achievements among both the men in the ranks and supervisory personnel.

M. O. Beverley, plant manager for Moore's Elmira, N. Y., facilities, said that proper methods engineering paid off well because it helped to work more closely with employees, thus improving mutual relations, helping each side better to understand one another.

D. Stirling, plant manager for Moore at Thurmont, Md., suggested that the effect on employees of introducing a methods study was important for management to remember, and that by conditioning workers to such studies and their results, it was possible to see effective, hard work matching inspiration, thus reducing the need for enlarging facilities for greater production.

GLUED CONTINUOUS FORMS

Under the heading of glued continuous forms, the second panel devoted its time to supplying the pros and cons of applying adhesives to business forms at the right time, place and quantity. Problems inherent in the stapling, crimping, sewing and glueing of continuous forms were thoroughly covered by George W. Alt, Jr., vice president, The Baltimore Business Forms Co., Baltimore; George E. Yanke, production manager, M. G. Lewis Printing Co., Jacksonville, Fla., and Howard E. Towell, plant superintendent, Rotary Manifold Forms Corp., Detroit.

These three men devoted time to problems of collating and folding, the importance of keeping the paper free of the heat of adhesive nozzles to prevent smudging, the need to increase the rate of production of glued continuous forms, and the importance of obtaining smooth application of the adhesive, avoiding excess application.

George V. Upton, product manager, United Shoe Machinery Corp., Boston, with the three men above, helped to answer questions before a recess for lunch, during which many of the persons present continued to exchange views on a variety of production problems and their solutions.

TYPE-SETTING AND PLATE MAKING

Developments in type-setting and plate-making was the next principal subject discussed in which a panel comprised of Kurt Franck, plant superintendent, Philip Hano Co., Inc., Holyoke, Mass., Norman Pellegrine, Clarkson Press Inc., Buffalo, N. Y., and A. W. Kelly, director of research & development, The Baltimore Business Forms Co., Baltimore (with George DeVaughn, composing room foreman for Baltimore acting in Mr. Kelly's place because of the latter's inability to be there), covered various phases of producing a form by Photo-setter and a form by means of Photon, including all steps to the negative.

James Walden, Linofilm applications engineer, Mergenthaler Linotype Co., Brooklyn, N. Y., discussed Linofilm, its application and uses, while H. B. Gage, supervisor of Photopolymer printing plate field testing, E. I. du Pont de Nemours & Co., Philadelphia, discussed Dycril Photopolymer printing plates.

USING MAGNETIC INK

The last panel of the seminar's first day was devoted to the problems, solutions and uses of magnetic ink. G. L. Erickson, vice president, The Braden-Sutphin Ink Co., Cleveland, W. J. Brenn, director of industrial engineering, Autographic Business Forms, Inc., S. Hackensack, N. J., and Ray Fortune, executive assistant, The Standard Register Co., Dayton, Ohio, thoroughly developed their subjects, emphasizing that great attention to details and exacting tolerances must be paid to obtain the best results with magnetic ink.

The discussion panel that answered questions comprised the three speakers above, and Willard A. White, manager, Multigraph Product Planning, Addressograph-Multigraph Corp., Cleveland.

PRODUCTION PLANNING

Production Planning was the second day's opening panel discussion

participated in by William Green, production supervisor, Philip Hano Co., Inc., Holyoke, Mass., Richard C. Abbott, plant manager, Buffalo Avenue plant, Moore Business Forms, Inc., Niagara Falls, N. Y., R. D. Pugh, vice president in charge of manufacturing, The Shelby Salesbook Co., Shelby, Ohio, and Michael Schansinger, production manager, Alfred Allen Watts Co., Inc., Clifton, N. J.

Mr. Green suggested that preplanning each order before plates were made helped greatly, and that it was important to have flexibility in one's production board. Mr. Abbott pointed up the need to know what the customer intends to use the form for, flexibility in planning, and frequent reviews of efficient standards and practices. Mr. Pugh emphasized that custom-made production planning was best for his company, and that production had been sharply increased by an employe award system and closer work with workers. Mr. Schansinger pointed out that careful office planning reduces detailed work by plant personnel, thus speeding production in the shop. He also emphasized the fact that supervisors could and did frequently offer very helpful suggestions on future jobs.

William Green

Michael Schansinger

WASTE CONTROL

Waste control was the panel subject following lunch, October 16, with Bruce C. Sterne, vice president-operations, Clarkson Press Inc., Buffalo, emphasizing that most waste could be eliminated by appealing to the common sense and good judgment of one's employes, and pointing out that the success of the company and, therefore, their jobs depended in part on holding waste down.

W. C. Ryan, plant manager, Autographic Business Forms, Inc., S. Hackensack, N. J., told of a foremen's seminar held weekly to forestall errors and waste on particularly tricky jobs coming up, the need to be sure that proper raw materials were available for each order, and that most mistakes resulting in waste could be eliminated by careful planning in advance.

Kurt Franck, plant superintendent, Philip Hano Co., Inc., climaxed the panel discussions by describing the great improvements made in offset plates and the marked increase in the speed with which they could be made.

A general discussion of the two days' panels and subjects was participated in by all persons attending the BFI seminar for two hours following the final talk. The unanimous reaction of all those present was that it had been one of the most successful seminars ever conducted in the manifold business forms industry.

Moore Paper Box Plans Expansion

Operations of Moore Paper Boxes, Inc., will be expanded when it moves from 16 Ventura Ave. to a building at 438 Hartford, St., Dayton, Ohio, according to Burt D. Moore, president.

Mr. Moore said the box-making firm, formed in 1957, has outgrown its present plant. It makes boxes for the floral, bakery and department store fields and has an industrial packaging division.

Hoerner Tupelo Plant Now in Operation

Hoerner Boxes, Inc., has announced the completion of its new sheet plant in Tupelo, Miss. Manufacturing operations were started October 19.

Forrest R. Hamilton is the general manager of the new operation; Carl Schmidt, the superintendent; and Philip Cosgriff the office manager.

Tupelo is the tenth in the chain of plants operated by Hoerner Boxes, Inc. Other Hoerner plants are located at: Sioux Falls, S. D.; Minneapolis, Minn.; Des Moines, Ottumwa, and Keokuk, Iowa; Sand Springs, Okla.; Fort Worth, Tex.; and Fort Smith, Ark.

Pioneer Business Forms Names General Sales Mgr.

Lester J. Tibbetts has been promoted to general sales manager of Pioneer Business Forms, Inc., Tacoma, Wash. Sales offices are located in Tacoma, Spokane, Portland and Bellingham, as well as Seattle. The firm is currently moving into its new plant in Tacoma.

Mr. Tibbetts, who was district sales manager of the Tacoma area for Pioneer prior to assuming his new post, is now supervising various marketing functions of his company, in addition to sales.

Scott Reorganizes Field Sales Responsibilities

A series of organizational changes affecting the responsibilities of Scott Paper Co.'s field sales organization have been announced by H. F. Dunning, Scott's vice president in charge of marketing for retail brands.

Paul Brown, who has been Scott's national retail sales manager since 1953, will continue to provide direction of that organization as Scott's director of retail sales. To assist Mr. Brown three sales managers have been appointed.

George Wilcox, currently New York divisional manager on leave of absence while attending Harvard Business School, has been named northern sales manager. He will supervise the following retail sales divisions: New York, New England, Buffalo, Cleveland, Detroit, Chicago and Minneapolis.

Vernon Tessier, who has been a member of Scott's retail organization since 1945 and most recently has served as administrative assistant to Mr. Brown, will serve as central sales manager. He will supervise Scott's retail sales divisions in Philadelphia, Charlotte, Atlanta, Dallas, Houston and St. Louis.

Frank O'Brien, currently Philadelphia divisional manager, will serve as administrative sales manager supervising the company's internal sales activities. Mr. Brown will continue to provide direct supervision to the company's two West Coast divisions.

Two men have been promoted to the posts of divisional manager. George Rivnak, a member of Scott's

sales organization since 1948 and currently Philadelphia district manager, has been named divisional manager in Philadelphia. Everett Frank who joined Scott in 1955 after receiving his Master's degree from Harvard Business School has been named New York divisional manager.

Sam Miran, who has been a member of Scott's sales organization for the past 10 years and has served since April on the sales staff, has been appointed an assistant to the administrative sales manager.

St. Joe Plans Start at New Plant by Dec. 1

St. Joe Paper Co. plans to equip its newly acquired Cincinnati area plant in Sharonville, Ohio, in time for a start in operations by December 1, according to Paul F. Dickmeyer, general manager, Fort Wayne Container Division. The division is comprised of three other plants in Hartford City, Ind., Pittsburgh, Pa., and Rochester, N. Y.

The Cincinnati area plant is the eighth in St. Joe's growing group of box plants. St. Joe is already moving equipment into the building. The plant, which has more than 105,000 square feet of production area, was acquired from the Electric Auto-Lite Co. last spring.

The main piece of equipment in the plant, a 74-inch corrugator-doublebacker which combines kraft linerboard with the fluted corrugating medium, already is being installed.

Hinde & Dauch Names Two New Production Mgrs.

Appointment of two plant managers for the Hinde & Dauch Division of West Virginia Pulp and Paper Co. has been announced. W. Dana Chapin has been appointed production manager of H&D's Gloucester, N. J., plant, while Alexander M. Santorella has been named to the same post at the division's Hoboken, N. J., factory.

Mr. Chapin, who has been with Hinde & Dauch since 1951 when he joined its Watertown, Mass., plant as an industrial engineer, has served since April 1958 as plant production manager at the Hoboken location.

Mr. Santorella joined Hinde & Dauch in 1952 and has served in various production positions at local, regional and divisional levels prior to accepting his most recent position as general foreman of the Hoboken plant.

Rap-In-Wax Plans Expansion Program

The purchase of a 50,000 sq. ft. building to house the expanding operations of Rap-In-Wax's eastern subsidiary, United States Packaging Corp., has just been announced. The plant expansion program is under the direction of Harold W. Wendorf, vice president of engineering and development.

Acquired from Arnel Plastron Co., manufacturers of plastic materials, the building was built about ten years ago. The plant itself is a one floor, all brick structure on 2 acres of land. It is located at 80 Leunig Street, South Hackensack, N. J.

The present plant of U. S. Packaging Corp., located in Paterson, N. J., will eventually be sold to the State of New Jersey to make way for a new expressway.

As part of the plant expansion program, a new extruder-laminator, which has been under construction the past year, will be moved into the new plant in December. The production equipment in the old plant will be moved commencing in January. Manager of the New Jersey production operations is G. C. Rickelmann.

Rap-In-Wax now operates production plants in Minneapolis, Minnesota; Paterson, New Jersey; and Columbus, Georgia.

Odell Joins Crocker, Burbank Papers

Malcolm J. Odell has been appointed product development manager by Crocker, Burbank Papers, Inc., Fitchburg, Mass. This appointment is the latest step in expanding the company's activities in polyethylene coated papers for which new capacity has been added during the past few months.

Mr. Odell has been a specialist in development and marketing of new packaging products for 22 years. During World War II he served as chief of Packing and Packaging Section, U.S. Army; chairman, Army Packaging Boards; and vice chairman WPB Container Coordinating Committee.

In September he resigned as general manager of the Plastics division of Ludlow Papers, Inc. He will join Crocker, Burbank Papers, Inc., at its Fitchburg headquarters on November 1.

Arvey Buys International Tag & Salesbook Co.

Arvey Corp., Chicago, and Universal Match Corp., St. Louis, announced yesterday the purchase by Arvey of International Tag & Salesbook Co., Chicago, a subsidiary of Universal Match.

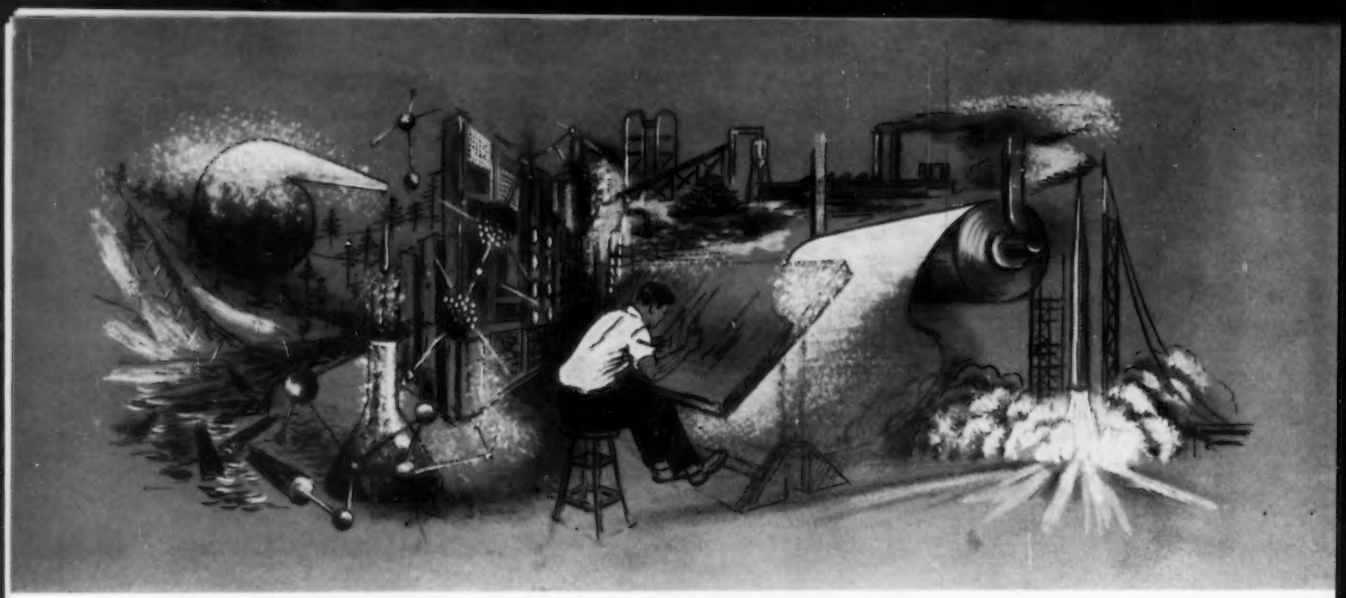
Olin-Mathieson Opens New Owosso Plant

The completion of the transfer of corrugated container production facilities from Essexville, Mich., to a new plant in Owosso, Mich., and the start-up of production were announced by the Packaging Division of Olin Mathieson Chemical Corp. M. H. Collet, vice president and manager of the division's forest products operations, said that the move brings Olin nearer to the center of its selling area.

The new plant, built to Olin's specifications, is twice as big as the former Essexville plant, with three times the production capacity. Machinery has been modernized and new taping, stitching, and die-cutting facilities have been installed. The new plant offers complete box-making facilities and a design service.

It also is equipped for two-color printing. The Packaging Division recently announced plans for a two-year, $12,000,000 plant improvement program.

Norman De LaForet, who headed the Essexville operations, will manage the new Owosso plant. He announced that about 50 per cent of the Essexville work force had made the move to Owosso to continue with Olin.



Atomic Power for the Paper Industry?

"Best for the application of nuclear process heat" says expert, speaking of our industry at TAPPI's 14th Engineering Conference.

Paul D. Van Derveer,
Associate Editor,
Paper Trade Journal

"Present competitive situations for nuclear heat are found mostly in plants where large amounts of low pressure steam are required on a continuous production basis and at a high load factor (high yearly use)." This was a significant point in a paper by J. W. Magee and J. H. Wright of Westinghouse as they gave a progress report on atomic power before TAPPI's 14th Engineering Conference. Held October 12-15th at the Hotel Penn Sheraton in Pittsburgh, Pa., the conference was given a highly optimistic view of possibilities for atomic power.

Dr. Wright reported that research and development in the application of controlled nuclear fission power has been in progress for more than ten years and interest in commercial application has been quite active.

He said that besides nuclear power generation, a possible economic attraction for nuclear energy is in process heat applications where large quantities of relatively low grade are required. A number of nuclear systems are available for such applications, each with its own advantages and disadvantages. The application of nuclear process heat appears best in the paper and pulp industry. Not only are the total heat energy requirements large now, but the increase in requirements is following the trend to larger size individual heat plants.

Low Fuel Cost Attractive

Dr. Wright said that it was also significant for the paper industry that from four to six per cent of the value of the product is represented by the cost of heat energy. Therefore, possible savings in supplying this heat energy may significantly affect the savings in production. Besides the possible economic advantages, there are several other indirect advantages to be gained by use of nuclear process heat. If heating plants need to be located where local ordinances prohibit smoke production, nuclear plants offer a good advantage. The compactness of a large amount of nuclear energy in a small space eliminates the need for large fuel storage areas and releases this land for more productive uses. However, the main economic attraction for use of nuclear heat must lie in the low fuel cost. The future savings may be much more than the present due to the foreseeable increase in fossil fuel costs due to diminishing supply and increased market competition for these fields.

According to Dr. Wright, nuclear fuel costs include not only burnup of fissionable material (with appropriate credits for any new fuel formed) but also fabrication costs for the high precision core and extensive chemical processing to prepare the fuel for service and to recover the valuable partially spent fuel from the waste fission products. Since various materials can be used in reactor cores only within certain temperature ranges, a relationship

Drawing by staff artist, Bill Perry, at top of page represents various phases of engineering activity in the pulp and paper industry.

Mr. Hill pointed out that a certain and operating practice are such that moisture contents of 35 per cent (wet

exists between nuclear fuel costs and operating temperature. Present competitive situations for nuclear heat are found mostly in plants where large amounts of low pressure steam are required on a continuous production basis and at a high load factor (high yearly use).

General Considerations

A few general considerations for use of a nuclear heat plant were said to be that it would have a large thermal rating and high load factor to reduce the unit heat cost, that it be located near plentiful water supply as normally needed for the process, and that the steam used for the process needs be kept separate from the primary reactor coolant to prevent possible contamination or activation of the product. Another need for the secondary system for process heat use is to eliminate large amounts of relatively expensive high purity make-up water to the primary system if water is used as the reactor coolant.

While a clear cut choice for type of reactor system to apply to a general paper-pulp mill is not possible without detailed study of the utilization factors, it appears that present application of nuclear process heat should be by a closed cycle water reactor with either no net steam or with bulk steam production in the core.

Competitive Area for Nuclear Plant

Dr. Wright said that according to census estimates, the average price paid by paper and pulp mills in 1956 for commercial fuels was close to 32c/10^6 B.t.u. However, the costs of individual plants may vary from 16c/10^6 B.t.u. to over 70c/10^6 B.t.u. depending on the location and the type of transportation facilities available. He made the assumption that a conventional and nuclear unit costs the same to operate and maintain, excluding fuel costs. He then proceeded to show that a 50 Mwt nuclear plant may be built today in the range of prices of $60 to $80/Kwt, which would make it economically competitive with a conventional plant paying from 57c to to 69c/10^6 B.t.u. for fuel. In this analysis simplifying assumptions were made which can vary widely depending upon any particular plant and its methods of operation, load factors, fixed charges, etc. However, he said this example should, at least, define an area in which a nuclear heat plant may be competitive and warrant further investigation so as to properly evaluate savings in production.

CONFERENCE PROGRAM

TAPPI's 14th Engineering Conference lasted from Sunday, October 11th to Thursday, October 16th, beginning with committee meetings Sunday afternoon and evening and ending with mill tours to Jessop Steel Co., National Annealing Box Co., Westinghouse test nuclear reactor site and their research labs. The official program began promptly Monday morning with opening remarks by General Chairman J. R. Curtis of the Scott Paper Co. The conference then broke up into groups headed for sessions on (a) steam and power, (b) maintenance engineering, (c) electrical engineering and (d) mechanical engineering. Continuing through Wednesday afternoon other sessions were (e) civil engineering, (f) engineering economics, (g) process instrumentation, (h) fluid mechanics, (i) sanitary engineering, (j) corrosion, (k) industrial engineering and materials handling, (l) chemical engineering, (m) drying. 50 papers were presented in all. Selected papers are condensed below.

During the conference, J. R. Lientz, Union Bag-Camp Paper Corp., president of TAPPI, made the following appointments: Engineering Division—M. J. Osborne, Bowaters Southern, chairman; N. Shoumatoff, West Virginia, vice-chairman. Corrosion Committee—H. B. Harris, Jr., Union Bag-Camp, vice chairman; A. O. Caldwell, Service & Erection Co., secretary. Electrical Engineering — S. Andersen, West Virginia, chairman. Fluid Mechanics —C. A. Lee, Formex Co. (Div. of F. C. Huyck) chairman; W. R. Palmer, Link Belt, secretary. Steam and Power—H. R. Emery, St. Regis Paper Co., chairman.

Extensible Paper Machinery

Charles E. Hill of West Virginia Pulp & Paper Co. spoke on extensible paper machinery beginning with the statement that Clupak is the trade name for a revolutionary new paper with the appearance of a natural sheet, whose most striking feature is an exceptionally high degree of controlled stretch. This stretch, in combination with a high tensile, imparts to extensible paper a toughness which can be three or more times that of regular paper. In the process, the fibers are compacted and reoriented without moving out of their original planes. This results in a denser sheet than regular kraft. When the stretch is removed from Clupak paper, the caliper is not substantially reduced and actually increases in many cases. This is a fundamental difference between Clupak paper and crepe paper.

Fundamentally, the manufacture of Clupak paper entails compacting of paper at the point in the manufacturing process where only part of the hydrogen bonds have been formed. The present extensible paper machine is based on the mechanism of using an elastic medium, a means of stretching the medium longitudinally so that the surface is elongated, pressing a paper web of suitable moisture content against this surface, and allowing the medium to contract, thus causing the paper web to shrink with it.

Machine direction stretch of over 100 per cent has been achieved in the laboratory by this method. On the machine 20 per cent stretch has been achieved and higher would be possible. While machine direction stretch increases substantially, there is a limited concurrent increase in CD stretch and toughness.

Machine Arrangement

The general arrangement of No. 3 machine extensible unit at West Virginia's Charleston mill was next discussed by Mr. Hill. He said the nip bar on this machine is 6½ inch diameter. A larger bar would be desirable from the point of view of deflection, but such bars need heavier loads, and total loadings quickly get out of hand. The nip bar arrangement as now used is supported with nine pairs of backing shoes. Nip pressure is independently adjustable at each backing shoe. The nip bar is stationary and flooded with water, which is an excellent lubricant for rubber.

The main drum is 48 inch diameter, chrome plated. It is steam heated with a maximum design pressure of 150 p.s.i.g. To assure no sticking, the drum is heated with 60-70 p.s.i.g. steam pressure. This heats the sheet and forms a layer of steam which pushes the sheet from the dryer. In addition, a release agent is sprayed on the sheet as it enters the nip.

The draw between the unit and after drying section is quite important as it is very easy to pull all of the stretch back out of the wet compacted sheet. Potter Aeronautical Co. speed indicating equipment was installed on the extensible unit and the reel. Later, this equipment was installed on all sections, permitting the operators to read absolute speed of any section, or the ratio of speeds between any two sections.

Mr. Hill pointed out that a certain amount of roughness is acceptable in multiwall sack paper, but it is perfectly possible to make Clupak which is actually smoother than regular kraft. An interesting sidelight is the fact that the wire side of Clupak paper is as smooth as the felt side of regular paper. The reason is the polishing action of the steam dryer as the paper compacts against it.

The guides used on the extensible units are similar to wet felt guides except for size. As with other guides, it is important to have a good wrap.

Showers and Blanket

The nip bar is stationary and it is necessary to keep it well lubricated with water. Several internal showers are used for this purpose. If the showers should fail, the frictional heat developed would quickly soften and destroy the blanket.

Blanket cooling showers and nip lubricating showers are used during a break. The curing temperature of the blanket is 260-270°F., so these showers are quite important to prevent severe oxidation where the blanket contacts the hot drum. Edge cooling showers are used continuously to prevent oxidation and edge cracking where the rubber is not covered by paper.

The amount of compaction at a given nip setting is determined by the hardness of the rubber blanket. The softer blanket gives higher compaction. On the other hand, a harder blanket gives a smoother sheet and has better life. Increased thickness has a similar effect as softness. He said that blankets of about 50 durometer (123 P&J) have been standardized on.

Blankets are ground every wire change, which usually works out to around 200 operating hours. Surface cracks begin to appear on the edges at about 250 hours. At this point, the blanket must be ground because the cracks propagate rapidly. A minimum of .030 inch of material is removed at each grinding. The blanket should be ground cold, otherwise it is impossible to get a uniform surface. The blankets are ground dry with a 10 inch wide belt. The blanket crawl drive operates at 42 f.p.m. No. 3 machine was initially equipped with a full-width roll grinder. Due to deflection and chattering of the grinding roll, it was impossible to do a good job in a reasonable length of time, so it was replaced with a traveling belt grinder.

Initial cost projections were based on a blanket life of 500 hours. Improvements in blanket construction and operating practice are such that we now expect to exceed a life of 2000 hours. Blankets for No. 3 machine cost about $12,000 and take about six hours to replace, so there is good reason to seek longer life.

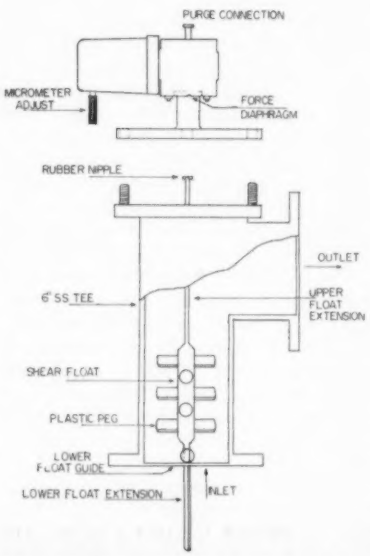
The blankets are 25 feet inside circumference. A 1⅛ inch by 248 inch wide blanket for No. 3 machine weighs about 4,000 pounds. Changing a blanket is similar in principle to putting on a fourdrinier wire.

Mr. Hill coninued by saying that the moisture content at the extensible unit is extremely important in determining the amount of stretch and surface character of the sheet. At moisture contents of 35 per cent (wet basis) and above, very smooth sheets are produced. The stretch is easily pulled out of such a wet sheet in the following draws, hence more stretch must be imparted at the unit in order to compensate. The wet sheet also tends to stick to the drum, which hinders compaction and necessitates consumption of more release agent. Moisture contents in the 25-30 per cent range produce high stretch with a minimum amount of nip compression and release agent consumption. It is very difficult, however, to produce a sheet which is not fairly rough.

The Evaluation of a Versatile New Consistency Regulator

The "Consistorator," a simple and reliable consistency regulator, has been thoroughly evaluated on sulphite pulp in both bleached and unbleached systems, and was reported on by K. I. Mumme and H. W. Swanson, both of the Kimberly-Clark Corp. A progress report on findings obtained thus far on "bookpaper broke" pulp was also given.

Compared to existing mill regulators, the Fischer-Porter "Consistorator" was said to require less installation space, operate over a wider consistency range and give a faster response. Like many existing regulators, it can be remotely operated. The instrument can be used as a full flow or a sample line device.



NEW CONSISTENCY REGULATOR said to be extremely versatile.

Description

It was reported that the basic instrument consists of a sensing device and a force transmitter with a 3—15 p.s.i. pneumatic output. The sensing unit consists of a carefully designed float operating in a pipe tee with raised side outlet. The float is mechanically coupled to a force transmitter causing an ouput which is a function of the shear force on the float. The transmitter contains span, zero, and damping adjustments. Any standard pneumatic controller can be used with the basic instrument. The principle of operation is such that in simple terms, it can be said that the stock stream deforms as it rushes past the float pegs. This creates a shear force which is a function of the consistency of the stock.

Bleached Sulphite

The unit was installed in a bleached sulphite system in parallel with an existing regulator of another type which allowed easy comparison of the performances of the two units. Consistency samples were taken from the overflow chamber of the existing regulator every two hours on a 24-hour-per-day basis. Both controllers measured the same stream, but only one at a time was allowed to control the system consistency.

Four control situations were studied with the "Consistorator" in the bleached sulphite system. In the first trial, the existing regulator was used for control with the unit recording the stock consistency. The second trial was made with it controlling consistency by means of a three inch Saunders type valve on the dilution line. The third trial also had the "Consistorator" doing the

controlling, but a three-inch double port valve replaced the Saunders type. The fourth trial was run with the unit controlling the double port valves and with the controller set at the optimum values as determined by an analog simulation of the entire system. Good control, rangeability, and reliability were shown on the bleached sulphite system and this led to popular acceptance of the "Consistorator" by the operators and management.

Unbleached Sulphite

Another installation was made on an unbleached sulphite system and the major difference between this system and the bleached system was the cleanliness of the pulp. Unbleached pulp contains dirt, shives, small knots, spent liquor, pitch, and other foreign objects, since, at the point of regulation, this pulp has not been screened or cleaned. The "Consistorator" in this process was a direct replacement for an existing consistency regulator which could not be made to operate properly.

It was reported that some trouble was experienced with foreign material in the pulp. Occasionally the float was jammed by shives, knots, or hard-packed balls of stock. This problem was not serious and actually occurred less frequently than it did with the previous regulator. Easier accessibility could be provided by replacing the flange with a clamp-on type.

Successful control with a minimum process "down" time requires careful installation. A sample line system was preferred to a full flow system to eliminate the need for a process shut-down during "Consistorator" maintenance or cleaning periods. The versatility of the "Consistorator" was demonstrated during this installation. The control point was varied from 2.2 to 4.4 per cent consistency with no noticeable change in control performance.

Trial on Bookpaper Broke

The experimental unit was next installed in a bookpaper broke system. Indications are that performance is equal to that on sulphite. Preliminary data indicate that the slope of the calibration curve is quite different from the slope of the curve for bleached sulphite pulp. This was expected, since the characteristics of broke are far different from the characteristics of sulphite pulp. Trouble from foreign objects, such as pencils, gloves, hats, etc., was expected, but none was found. A broke installation directly downstream from a beater might cause more trouble. In such a position, easy float accessibility would be highly desirable.

PROCESS INSTRUMENTATION (l to r.). J. K. Powell, Bowaters Southern Paper Corp.; J. W. Taylor, Consolidated Water Power & Paper; H. J. Mummé and H. W. Swanson, Kimberly-Clark Corp.; E. W. Prince, Champion Paper & Fibre; R. D. Clarke, Minneapolis-Honeywell.

Modifications

The manufacturer of the "Consistorator," Fischer-Porter Co., has made several modifications to the unit since this evaluation was carried out. A major change is the introduction of a "slack diaphragm" transmitter. This unit requires no purge, a fact regarded by the authors as a significant improvement. The new unit also, by design, is supposedly insensitive to pipe and high frequency flow vibrations. Another innovation, still in the experimental stage, is a hydraulic pilot which transfers the signal from the float to a standard differential-pressure transmitter. Other changes include production of units up to 16 inches in diameter and the extension of the float rod. Another float modification is intended to reduce the lower operating limit to well below 2.0 per cent consistency.

Wet End Electric Helper Drives for Fourdrinier Machines

D. C. Pier, Beloit Iron Works, and S. J. Campbell, Westinghouse Electric, reported on helper drives, TAPPI project No. 748. The fourdrinier sections of most new paper machines include several driven rolls. In the past a single indrive, usually on the couch roll, was sufficient. Today additional indrives are added to the wire because of new fourdrinier designs, and as a result, higher safe operating speeds, higher tonnages, and increased wire life are achieved.

Reasons for applying electric helper drives to the wire section of a machine are:

1. To provide for the total power input required by the fourdrinier. The principal reasons for this use of multiple indrives are the increasing use of pick-ups, and the practice of taking the sheet off an open run of the wire rather than directly off the couch roll. These practices have made it necessary to design fourdriniers with a turning roll or forward roll. Because of reduced wrap on the couch and because there is no vacuum on the turning roll, the drive abilities of both rolls are reduced. It has thus become necessary to distribute the total load amount to two or more indrives.

2. The modernization or speed-up of existing machines may result in increased power requirements at the fourdrinier section and also in changes in the wire run.

3. To allow, in some cases, operating the fourdrinier for slow speed or wash-up conditions without having to jog through the section clutch.

On new machines helpers may be applied to rolls located on the bottom run of the fourdrinier wire, with the horsepower rating being a function of the wrap of the wire about the roll and the desired wire tension on each side of the particular roll, and the machine speed. The various arrangements used on helper drives are as follows:

a. Helper on couch only.

b. Helpers on couch and turning roll.

c. Helper on couch and small helper on 1st return roll.

d. Helpers on couch, on two return rolls, size based on torque ability of return rolls.

e. Helpers on couch and three return rolls, size again being based on torque ability of return rolls.

On older lineshaft driven machines, a helper drive may be applied to an existing indrive to allow increased power input to the section without having to revamp the lineshaft parts.

Helper Drive Control

Any helper drive that is supplied to the wire section of a lineshaft driven paper machine must meet the following requirements:

1. The operation of the helper drive should be as automatic as possible in conjunction with the operation of the section air clutch on starting and stopping.
2. Since the remainder of the machine, being mechanically driven, will not trip out on slight overloads, the helper drive should be arranged so that it will not trip out on the same type of overloads.
3. The helper drives should automatically adjust to the proper loads under the conditions of stock-on and stock-off on the fourdrinier section.
4. There should not be any slippage of the helper driven rolls during starting, stopping, running, and conditions of stock-on and stock-off.
5. The helper drives should not require continuous attention from the operator after the machine has been put into production.

The report mentioned that recent practice on some new machines is to apply power to one or more return rolls on the bottom run of the wire to help drive the fourdrinier section. This arrangement provides for a higher wire tension on the turning roll, so as to allow the application of more power at the turning roll, which is holding wire speed, and reducing the load required on the couch roll. This system is relatively new. The ratings of the return roll motors are functions of the wrap of the wire around the rolls and the desired tension on the slack side of the rolls. A common practice is to use two or three indrives on the bottom run of the wire with the motors having the same rating as the couch motor, where the drive ability of the return rolls and the expected total load on the fourdrinier allows this combination.

Also discussed were details of jogging, washup and acceleration control, helper drives for dandy rolls and lumpbreaker rolls, pickup and transfer section helper drives, and general considerations in selecting control systems.

SANITARY ENGINEERING (l. to r.). W. A. Moggio, Lake States Yeast Corp.; L. L. Klinger, Whippany Paper Board Co.; R. O. Blosser, National Council for Stream Improvement; A. J. Wiley and B. F. Lueck, Sulphite Pulp Manufacturers' Research League.

A New Challenge in Tomorrow's Maintenance

Are new plants being designed for low-cost maintenance? Are existing plants staffed and tooled to provide efficient maintenance at the lowest overall cost? These are two searching questions asked by Henry P. Evans, staff consultant for C. F. Braun & Co. He went on to tell how his firm had made surveys of 35 industrial plants and developed a maintenance-improvement program for each. These surveys along with their work and observations in many other plants, were the source of the maintenance thinking which he discussed.

In plants experiencing high-maintenance costs, or insufficient maintenance, or sometimes both, certain definite deficiencies are usually found as follows:

Maintenance policy not well-defined.

Tooling inadequate for the work.

Heavy use of manpower.

Looseness in organization.

Poor records of costs, manhours, and equipment.

Lack of management interest.

These weaknesses combine to affect maintenance adversely. The results are high maintenance costs, limiting of production, lowered morale of employees, negative effect on sound maintenance practices.

Plants are quite different maintenance-wise, even those with almost identical processes and making the same products. Thus any program developed for improved maintenance must be tailored to fit the particular plant. Nevertheless, analysis indicates that all of these tailor-made programs stem from the same basic principles. These principles, the key to economic maintenance, are four in number,

1. Establish a clearcut policy on maintenance.
2. Tool and train the maintenance man.
3. Combine and centralize the facilities.
4. Provide a sound organization and good methods.

Application of Principles

Mr. Evans said that maintenance shops are an especially effective place to apply the principle of tooling the maintenance man. All of the craft shops such as machine, weld, pipe, boiler, electric, instrument, carpenter, valve, paint, sheetmetal—should preferably be brought together in one building. For low-cost handling, this building should have bridgecranes, jibcranes, fork-lifts, wide aisles. This building should provide ample working space, vertical as well as horizontal. The width of a bay should be not less than 60 feet and often wider. Clear space from underside of the bridgecrane to the floor should be ample for high lifts and certainly not less than 16 feet. Illumination should approach the values recently recommended by the Illuminating Engineering Society. For many geographical locations, the shops should be of modern design and flexible, not hand-me-downs or single purpose.

The sizing, planning, and layout of the shops should be based on doing most of the repair work in the shops rather than at the production units. In the shops, the proper tools, effective handling, and skilled craftsmen are readily available. At the production units, maintenance men must resort to makeshift methods, jury

rigging, and handtools.

The mobile equipment fleet should usually include several types of trucks for hauling, several fork-lifts for handling, a small but highly maneuverable crane and a truck crane with a long boom. Maintaining this mobile equipment will usually call for a garage inside the plant. For effectiveness and economy, these operations will need such things as a hydraulic lift, pressure-lube equipment, battery chargers, motor analyzer, and so on.

For mobile equipment to do its work the plant's roads should be straight, two lanes wide, paved, well drained, and clear of pipe supports, valves, hydrants, and power poles. Access ways should run through a unit, rather than dead end and should be straight, paved, fairly wide, clear of obstructions, and provide the necessary vertical clearance for small cranes.

Warehouse

One phase of maintenance often almost completely overlooked is the warehouse. The warehouse should be set up to deliver maintenance materials to the shops and to the field when needed, and with the least handling. This calls for the warehouse to be in the same building as the shops. Materials then can be stored in the same bay as the shop that uses these materials. The warehouse should be laid out and tooled so that modern methods can be used for handling and for storage.

The organizational pattern for a maintenance department cannot be the same for all plants. However, the pattern can be made clear and can fix and define responsibilities. The maintenance department should generally be made responsible for the warehouse, garage, mobile equipment, minor new construction, and contract maintenance.

Contract Maintenance

In the last five years, several plants have gone to contract maintenance. Many plants have certain maintenance that contractors can do better and for less money. Here are the types of maintenance that a plant should consider contracting rather than using plant personnel.

1. Work calling for special equipment, special know-how, or for unusual craft-skill.

2. Work occurring so infrequently that plant personnel cannot handle it effectively and efficiently.

3. Work best handled by concentrating on it at a selected time.

Calls for Capital Dollars

Tooling up for low-cost maintenance calls for the investment of capital dollars. Studies indicate that this investment may range anywhere from two to five per cent of the replacement cost of a plant depending on size, type, age, and other characteristics of a plant. How can management justify spending capital money on maintenance? Here is the justification. These tools earn their way by decreasing the manhours spent on maintenance, by cutting down the money spent for maintenance materials, by decreasing the downtime of key production units, by cutting down the emergency work and the overtime.

When all these factors are evaluated, the investment in maintenance facilities will usually have a payout equal to or better than most improvements in plant. The payout time will sometimes be as rapid as one year, usually about two years, and seldom more than three years. the other attractive thing about these maintenance facilities is their long, useful life. When properly engineered, most of the facilities will serve adequately for 15 years or more.

Recent Improvements in Pulpwood Grinders For Insulating Fiberboard Manufacture

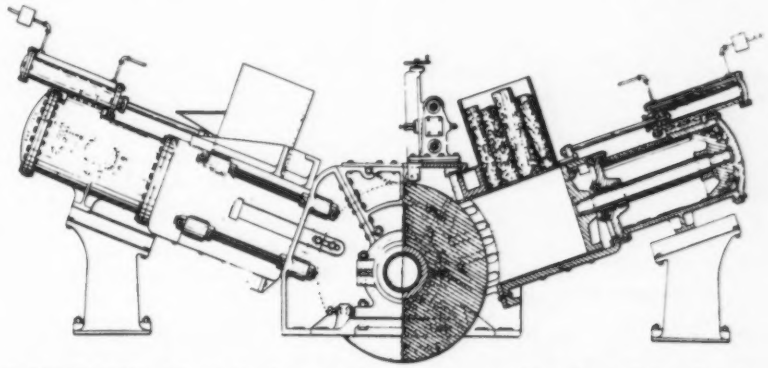
Speaking on wood grinding operation at Armstrong Cork Co.'s Macon, Ga., plant, William F. Fields, a project engineer for the company, began by pointing out that the selection of loblolly pine mechanical pulp for the manufacture of insulating structural fiberboard was carried out at the Herty Laboratory at Savannah, Ga., shortly after World War II. This work led to Armstrong's unique method of grinding wherein the wood is ground with the grain orientated parallel to the direction of movement of the grinding surface rather than at right angles. In general, the resulting stock, which is produced with an energy consumption of 30 horsepower per daily ton, is quite coarse and has a Canadian Freeness in the range 300—500 c.c. 70 per cent of the total fibers are retained on a 65 mesh screen. 7 to 20 per cent of total fibers are retained on a 10 mesh screen.

Parallel Grinding

After careful study, the 54-inch by 34-inch Great Northern grinder was judged as being in all respects the most suitable grinder for this method of pulping and was selected for Armstrong's Macon plant during the early engineering planning stages in 1946. The only modifications made to the standard grinder design were minor changes to the pockets to facilitate parallel grinding. When the plant was started up in 1947, the pulping operation consisted of four of these grinders arranged in tandem, each pair being driven by a 3000 horsepower, 80 per cent power factor, 240 r.p.m. synchronous motor.

These grinders operated in a very satisfactory manner for eight years when it became necessary for Armstrong to make a 150 per cent expansion to its Macon operation. Before adding more grinders a study was made of the original installation to determine if design improvements could be made to improve the efficiency of the grinders and/or improve pulp uniformity.

The first objective in the direction of increasing capacity was to determine if the surface speed could be



CROSS SECTION of Great Northern grinder shows logs positioned parallel to direction of grinder stone rotation.

increased, and if so, to determine the maximum allowable speed. An investigation of existing grinder installations was made, and it was found that while no installations of 54-inch stones were found operating faster than 3620 f.p.m., on larger stones speeds of 4000—4500 f.p.m. were found quite common in this country and in Canada. Concern over the effect on the quality of the pulp and not mechanical limitations finally led to the selection of 300 r.p.m. or 4250 f.p.m. for the new grinders.

The second objective in the direction of increasing capacity was to increase the speed of the pressure foot during non-productive portions of the grinder cycle (retraction and advancing wood to the stone surface). The third objective in the direction of increasing capacity and improving pulp uniformity was to control the pressure foot with regard to feed rates to keep the relationship between feed and speed constant without regard to the resulting variability in hydraulic pressures or motor loading. To accomplish the second and third objectives, it was decided to go to a high pressure hydraulic system so that a small, low volume, fast acting cylinder could be used to actuate the pressure foot. Oil was selected as the hydraulic medium.

Results

Because the eight grinders feed into a common system, the capacities of the original versus the improved grinders could not be determined from production records. There were also the complications of the need for control of electrical demand, variable downtime, the effect of stone diameter, and variable freeness requirements when making different products.

To evaluate the improved grinders, a seven hour observation period was planned. The grinders were under the complete control of the operators and were operated in a normal manner. All conditions were typical of those encountered in day to day operations. Daily production rates were adjusted for 12 per cent downtime to allow for stone changes and mechanical downtime. It is felt that the production rates reported are representative of those obtained under operating conditions.

The measured capacities follow:

Average Grinder Capacity (12 per cent downtime)

Four original grinders — 201.6 tons/day or 50.4 tons/day/grinder

Four improved grinders — 309.6 tons/day or 77.4 tons/day/grinder

DRYING (l. to r.). S. G. Holt, Consolidated Water Power & Paper; I. C. Innes, Bowaters; R. E. White, Villanova University; F. W. Berdux, C. K. Williams Co.; D. M. McCutcheon, Westinghouse; L. G. Janett, J. O. Ross Engineering Corp.

To account for the 50 per cent capacity increase, time studies were taken on the grinding cycles with the following results:

Average Grinder Cycles (Minutes)

	Grind	Retract	Delay	Total Cycle
Original grinders	2.95	.54	.11	3.60
Improved grinders	2.31	.08	.13	2.52

From this study, it can be seen that the capacity increase is partly due to the reduction of non-productive time (reaction time) and partly due to an increase in the grinding rate. At current prices, the cost for the third tandem wood grinder line that did not have to be installed at Macon due to improved design and control would have cost $325,000.

Drying Rates on Yankee Dryers

Some general observations by L. G. Janett of J. O. Ross Engineering Co. who reported on a survey of drying rates on Yankee machines were:

a. The arc of contact was given in the questionnaires and it is interesting to see the wide variation in this figure. With 12-foot Yankees, the arc of contact varied from 26 feet to 34.6 feet. The variation in arc of contact on 10-foot Yankees varied from 23.5 to 29 feet, although the latter figure was questioned by the mill who sent it in. Of the approximately 60 machines reported, ten indicated that they used two pressure rolls at times.

b. The nip pressures reported varied from 80 pounds per lineal inch up to 390 pounds per lineal inch.

c. Of the machines reported on, only three indicated presence of superheat in the steam to the Yankee dryers. Where moisture content was reported, it was the moisture content of the sheet entering the pressure roll nip and varied in general from approximately 65 per cent moisture to 75 per cent moisture.

d. The range of dryer shell thickness variation was from 1⅝ inch to 2-7/16 inch. One report indicated a 3 inch thick shell, but questioned the figure in their return.

Conclusions

The data so far analyzed would indicate that the many variables other than the steam pressure and surface temperature affect drying rates sufficiently to make trend lines difficult to establish. For future considerations, it would seem best to attack the problem of evaluation of drying rate by dividing it into three separate and distinct areas; namely, the heat transmission of the dryer, the portion of drying rate attributable to the air system on the machine which has been indicated to be quite high, with modern high pressure Yankee air systems, and the evaluation of that portion of the water removed by the pressure roll functioning as a drying operation. In connection with the latter, the stock temperature and shower water temperature unquestionably are important in the water removal rate.

Power Transfer Within Wet Felts

Reporting on power distribution as related to felt life problems were M. J. Osborne, Bowaters Southern Paper Corp.; Jay Knowles, F. C. Huyck & Sons; and C. C. Collins, General Electric. This study of the power distribution within the felt section was started for a number of reasons:

1. The effect of power transfer on felt life was unknown.
2. It was desirable to determine the practical amount of power to be transmitted through wet felts.
3. The power constants which were being used for various driven rolls in the felt section of a vacuum sheet transfer paper machine needed verification.

Although the study had begun on newsprint machine, it was expanded to include a modern cylinder board machine and a high speed vacuum transfer kraft machine. The expansion of this study was made at the request of the Electrical Engineering Committee of TAPPI.

General Procedure

The data for this report were taken from production machines. It was necessary therefore to establish practical assumptions and test procedures that would result in an absolute minimum amount of lost production time and which would give good practical results using instruments and equipment readily available to the average mill.

These procedures and assumptions can best be understood by examining the felt run on a typical vacuum transfer machine.

Power is flowing into the felt section through d-c motors at rolls 1 through 5 (bottom transfer press No. 1, top transfer press No. 2, bottom main press No. 3, wringer No. 4, and pickup No. 5). At each point of power input a portion of the power will be absorbed in the driven roll and the remaining amount will flow into the felt producing tension and stretch.

If we assume the felt tension at T_1 and T_6 are equal and there is no power transfer from the felt section to the wire at the pickup we establish the following relationships:

1. Power input to main press is equal to the power absorbed in the press plus the power transferred to the felt between the main press and the transfer press.
2. Power input to the pickup is equal to the power absorbed in the pickup plus the power transferred to the felt between the pickup and the wringer.
3. Power input to the wringer is equal to the power absorbed in the wringer plus the power transferred to the felt between the wringer and the transfer press.
4. Power input to the transfer press is equal to the power absorbed in the transfer press plus the power transferred to the pickup felt between the transfer press and pickup plus the power transferred to the transfer felt at T_6.

With different felt runs the same power formulae will not apply, but the same principles can be used to establish new formulae to suit any machine or felt run. Power into each driven roll was measured with conventional d.c. voltmeters and ammeters. The power output from each motor was obtained from the product of the motor rating in horsepower times the ratio of load amperes to motor rated amperes times the ratio of machine operating speed to machine rated speed.

To accurately measure felt tension at various places on the machine was impractical, but for a felt the tension is proportional to stretch and power input to the felt could be calculated from stretch measurements. Felt manufacturers stated that about 2½ pounds per inch tension would result in a one per cent stretch in the felt.

The power input to a felt at a given point can be calculated from data as follows:

$$\text{HP in felt} = \left(\frac{L_2 - L_1}{L_1}\right) \times 100 \times 2\tfrac{1}{2}\ \#/\%\ \text{stretch} \times \frac{W \times S}{33{,}000}$$

Where L_1 = felt length ahead of the driven roll

L_2 = felt length behind the roll

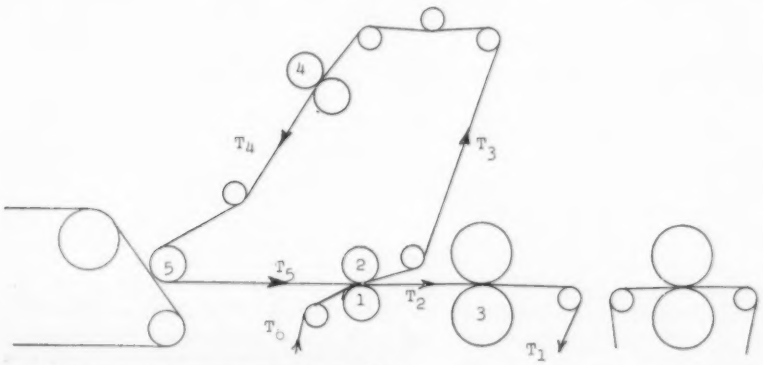
W = machine width in inches

S = machine speed in f.p.m.

The measurement of felt length was made with the Huyck felt wheel.

Conclusions

1. Under present operating conditions using drive constants recommended it is unlikely that power transfer into the felts will have any appreciable effect on felt life.
2. The power flow from drive motors into the felts to produce dynamic tension was very small compared to the static tension placed in the felts. The power input at any driven roll ahead of the main presses could be changed by large amounts without any noticeable change in paper making operation. It is believed that felt static tension could be appreciably reduced in most instances with control of felt tensions around the loop being obtained by drive motor loading.
3. The recommended power constants in general use for felt section motors appeared to be adequate. These recommended drive constants (RDC) are expressed in h.p. inch width/100 f.p.m. as follows: Main press .03; Transfer press .03; Wringer roll .015; Pickup roll .01. Power absorbed at the main press varies from machine to machine enough so that connected drive should never be sized below that corresponding to a drive constant of .03.
4. It is recommended that more study be given to static as well as dynamic felt tensions.
5. Power studies similar to this made in individual mills should prove valuable in maintaining constant operating conditions.



FELT RUN on typical vacuum transfer machine.

CHEMICAL ENGINEERING (l. to r.). A. W. Plummer, Hudson Pulp & Paper Co.; W. A. Dickens, Kimberly-Clark Corp.; R. V. Touchette, International Paper Co.; L. C. Jenness, University of Maine; R. S. Morgan, Mohawk Paper Mills.

Economic Aspects of Pressures and Temperatures for Pulp and Paper Mills

Turbine Generators

Manufacturers have the experience and design knowledge necessary to build turbines for any initial steam conditions that might be considered for the paper industry in the forseeable future. The first cost of equipment utilizing higher steam pressures and temperatures is usually higher, but on the other hand the fuel costs are greatly reduced, said I. H. Landes of General Electric Co.

There is a substantial saving in fuel cost when higher pressures and temperatures are utilized, reported Mr. Landes. For example, if 150 p.s.i.g. process steam is required, when compared to a 1450 p.s.i.g. system, the annual fuel costs are approximately $55,000 more for an 850 p.s.i.g. system, $95,000 more for a 600 p.s.i.g. system, and $160,000 or more for a 400 p.s.i.g. system. In selecting the steam conditions, the fuel savings must be weighed against the incremental investment for the higher pressure equipment.

Power Boilers

H. B. Wallace, Jr., Foster Wheeler Corp., speaking on power boilers said that in studying the effect of pressures and temperatures on the capital cost of power boilers, some of the more important items, which should be available include:

Steam and electric energy use and requirements tabulated with reasonable accuracy for present and long-term needs with heat balances for as many case studies as represent reasonable possibilities of attainment. Pressure and temperature levels contemplated by the heat balance should be in conformity with the generally accepted standards of available equipment.

Fuel characteristics for power boilers defined within reasonable limits of accuracy.

Cost of money established, as well as other fixed charges where new investment is involved.

Operating and maintenance costs and data for various pressure-temperature combinations and methods of firing estimated or projected from past mill experience.

It is desirable to obtain assistance of several manufacturers in obtaining budget or preliminary prices for equipment prior to the writing of purchase specifications.

Chemical Recovery

It should not be assumed that recovery units can arbitrarily be specified, designed and operated at pressures and temperatures which are common to public utility and some industrial power installation, without particular emphasis to operating conditions which are singularly inherent to recovery units. This was reported by F. W. Hochmuth of Combustion Engineering and W. J. Darmstadt of Babcock and Wilcox who presented data relating to selection of chemical recovery units.

As mentioned before, the fuel is a by-product of the process and in comparison to other fuel is most unfavorable. Because of the physical and chemical composition of black liquor, this by-product fuel imposes design and operating limitations which are not generally associated with oil, coal or gas. As these limits are approached, the supplier-designer and operator must be increasingly vigilant of all conditions which contribute to maintenance and operation of recovery units.

Mill Operation

T. J. Judge, International Paper Co. discussed some of the aspects of higher pressure and temperature as they relate to power plant personnel, equipment maintenance and operating functions. He said that operating problems of higher pressure and temperature plants are some different in nature than in the low pressure plants. They must be carefully analyzed and satisfactorily resolved. A program for training operating and maintenance personnel should be initiated to teach the new principles of operation and the new maintenance procedures that pertain to high pressure equipment. The management and technical supervision must also be familiar with the new requirements of safety, maintenance procedures and operating practices. Other important operating factors of higher pressure and temperature plants include the longer time needed for starting up and shutting down, and the importance of providing adequate treatment and accurate analysis of boiler water.

Up-to-Date Training in Paper Mills

"People are all alike in their tendency to be different," said H. Wayne Smith, training director St. Regis Paper Co., Pensacola, Fla. He was referring to individual difference in job performance from a training standpoint and the fact that it was essential to go further than a mere "job description" to develop such things as hiring specifications and job analyses.

He said that to analyze a job in this manner they catalog job tasks and responsibilities with respect to how each element relates to one of four factors, skill, knowledge, reasoning, attitude. Before any analysis can be applied, it is necessary to have facts—not guesswork— on job performance. The only place that information is available is right out in the mill—personally observing and talking to the men who actually are performing the jobs.

Basic Objectives

Using job facts each job can be arranged to outline exactly when and what must be done to accomplish these basic objectives:

1. develop whatever skill, knowledge and/or reasoning a man (or a group) needs to do a job productively—with a minimum of close supervision in the shortest possible period of time;
2. develop whatever attitudes are necessary so he (or they) will do it productively—when your back is turned.

Mr. Smith said that training programs must be tailored to reach a certain goal, which means (when considering the difference in individuals and circumstances) probably no two are identical. He said most of his firm's programs were planned on the basic premise of attaining maximum productivity in the shortest possible period of time.

The meat of this whole business, according to Mr. Smith, was who does all this stuff and how do you go about it? His feeling was that they needed only a very small training staff because they did very little actual teaching in a "classroom" sense. It is the first-line supervisor's job to see to it his crew knows what to do and does it productively. The foreman is the only one who can see to it this is done—so, to be effective, the foreman has to be the "instructor". It is the training staff's job to see to it he has every bit of help that can be given him in assisting him to discharge this responsibility, said Mr. Smith.

CORROSION (l. to r.). E. W. Hopper, consulting engineer; Z. Blanchard, Portland Co.; H. M. Canavan, Mutual Boiler & Machinery Ins. Co.; E. G. Holmberg, International Nickel Co.; L. A. Dela Grange, Hinde & Dauch; W. H. Parker, Hartford Steam Boiler & Ins. Co.; P. Zouck, Alloy Cladding Co.

Calculation of the Rate of Return on Investments

The derivation of a reasonably simple, universally applicable method of evaluating the yield obtained from an investment and relating same to the amount and length of investment commitment, was discussed by R. I. Reul, Food Machinery & Chemical Corp.

He said that it was the intent of his paper to present a logical derivation of the rate of return method, demonstrate its validity and value, point out refinements which can be included, illustrate practical applications, and warn against its use without a thorough understanding of the principles involved.

He gave examples illustrating the use of the Profitability Index which he introduced some years ago, and which uses the continuous receipt, continuous compounding convention. Said to be a practical yardstick of investment performance this index has the following specific and important advantages, according to Mr. Reul:

1. It appears to have almost universal applicability. Nearly any true investment situation can be directly evaluated. With minor modifications in the way the problem is set up, it can handle all true investment evaluations.

2. The yardstick is a "rate" rather than an absolute value. For this reason it yields figures for individual proposals that are directly comparable regardless of variations in size or length of life of said proposals; yet the effect of these factors enters the calculations.

3. It is not necessary to make any prior assumptions regarding earning rates, cost of obtaining funds, etc. The earning rate is calculated. The yardstick obtained is independent of the "Cost of Capital" but can be directly compared with same. Identical projects will be identically evaluated regardless of the financial situation of the sponsor. This evaluation can then be directly adjusted for the financial situation of the sponsor.

4. It is sufficiently flexible to permit rapid, easy evaluation of simple projects; yet provides means for taking into consideration all necessary factors considered desirable in evaluation of large complex proposals and delivers in both cases figures which are directly comparable.

5. It provides the basis for and an extremely effective means of post-audit. We can use it to find out:

a. How accurate our specific predictions of expenditures and receipts were and, in this way, improve our "batting average" on future predictions.

b. How well the project as a whole is performing in comparison with our original evaluation.

ENGINEERING ECONOMICS (l. to r.) F. C. Holmes, Bird Machine Co.; W. H. Brickner, Mead Corp.; R. I. Reul, Food Machinery & Chemical Corp.

Chip Blanking Can Mean More Chips for Pulp Mills

George Dickson,
General Manager,
Stetson-Ross Machine Co.

J. S. Hensel,
Forest Engineer,
American Pulpwood Ass'n.

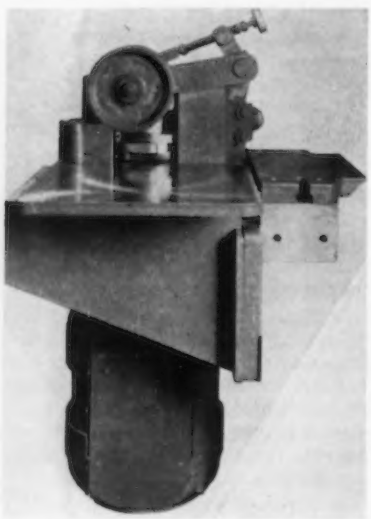
In sawmills, the word "blanking" means removing excess lumber from the board, leaving only enough thickness and width for the final finishing cut. Blanking also means removing the excess lumber width and thickness with cutterheads; the surplus goes into thin shavings which are of little, if any, value for pulping process.

Chip blanking means removing this excess with special cutters, and making it into valuable chips for use in pulp and paper. It is the making of chips from excess lumber size about which this paper is concerned.

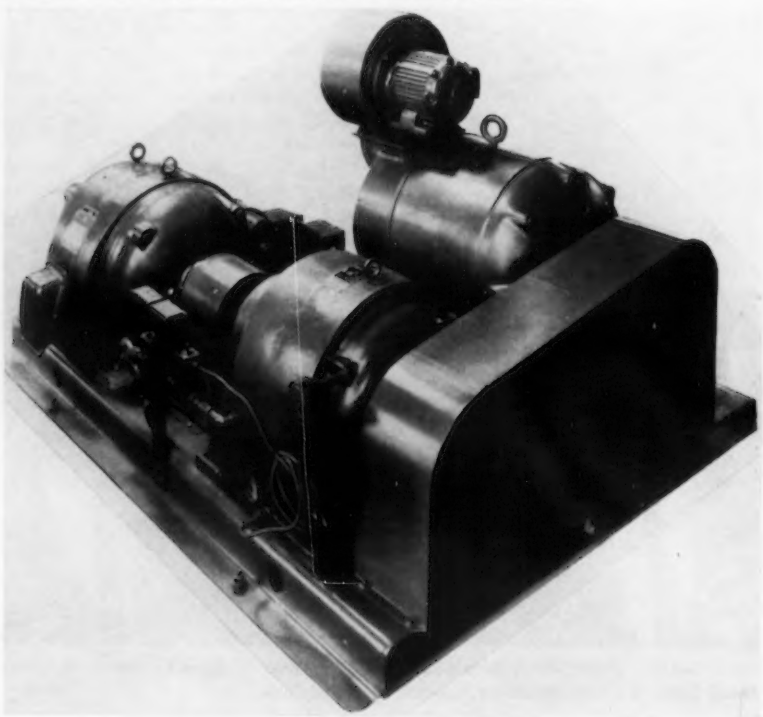
Based on American Pulpwood Ass'n. Technical Paper No. 59-P18, presented at the June 1959 meeting of the Western Technical Committee at Tacoma, Wash., and APA Technical Release No. 59-R32.

Why is Blanking Necessary

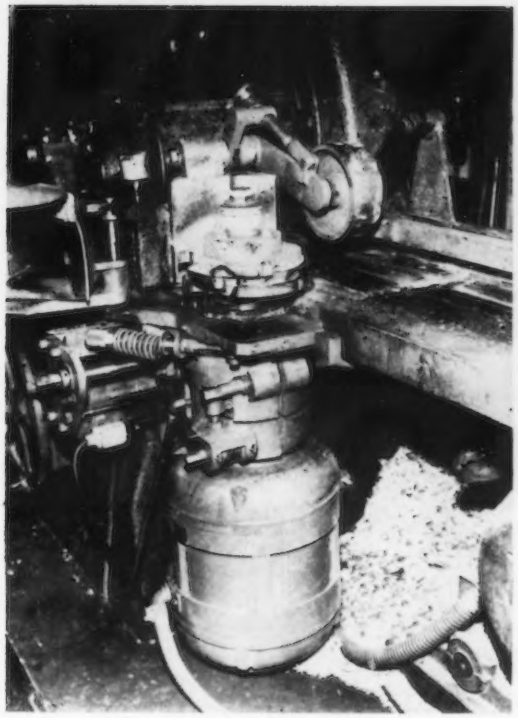
The first question often asked is "Why is it necessary for sawmill men to cut their lumber so thick that it requires blanking?" There are many reasons for this. Consider, for example, a sawmill using log gangs, which is supposed to be the most economical lumber sawing mill. In this country a mill of this type sells its lumber both in the rough and dressed so the lumber has to be cut full size, say, for example, 2 inch by 4 inch or 2 inch by 8 inch to accommodate his trade. Also if he is canting for resaw he has to add 3/16 inch to this thickness. The lumber he dresses for standard dimension is finished to 1⅝ inch by 3⅝ inch and 1⅝ by 7½ inch. In this case there would be left for chip blanking about 3/16 inch on face and 3/16 inch on edge on a 2 by 4-3/16 inch on face and 5/16 inch on edge of a 2 by 8, still leaving the planer ample material (3/16 inch) to finish both sides. Many machines finish four sides on narrow stock on ⅛ inch oversize, but the benefit of the doubt is given here, allowing 3/16 inch. This type of sawn lumber is supposed to cause least waste, both in saw kerf and lumber thickness. Also lumber is sold both green and dry so allowance must be made for kiln shrinkage. This also provides substantial chip bulk from green planer. Now chip analysis has shown that chip recovery is tremendous even on this type of sawn lumber. It also shows that the chip

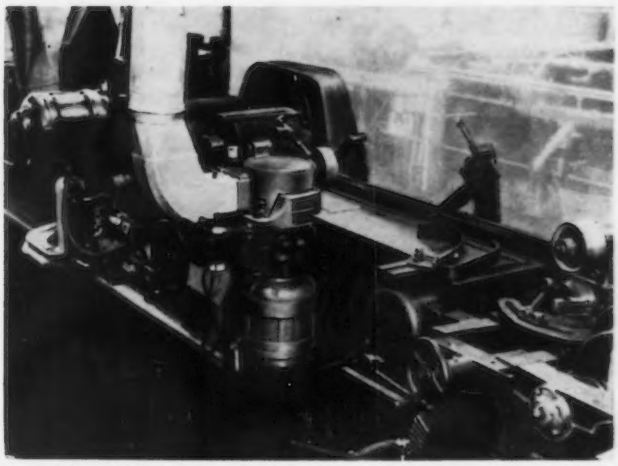


◄ **Sidehead chip blanker is shown here replacing the infeed girt on a lumber planer-matcher. Unit is mounted just prior to final finishing by the planer.**



As planer's feed rate changes, a variable frequency converter, as shown here, varies r.p.m. output of chipperhead. Thus, chip size is maintained. ►





▲ Sidehead chip blanker in operation at MacMillan & Bloedel, Ltd., Port Alberni, B. C.

◄ Cutterhead can be seen in this view of a sidehead unit minus its hood. Head rotates in the direction of lumber travel.

quality index is excellent.

Other Situations

Then there is another type of sawmill which cuts for the United Kingdom and off-shore orders. These sizes vary as much as one inch in thickness and the same in width. The lumber is then graded and all the "falldown" has to go either back to a resaw, which results in 60 per cent or better shims, which are unsaleable, or the lumber is fed directly into the planer, resulting in overload of the motors, causing undue strain on the machine and a terrific amount of shavings.

It is in this type of cutting that the chipper head becomes most effective and the largest recovery of chip dollars is made.

Then there are other types of smaller mills which cannot hold sizes, which result in a lot of poorly cut lumber. This type of lumber also produces a lot of merchantable chips.

Still another potential is in patterns with heavy cuts like double tongue and groove, decking, roofing, etc. It is possible for chipper heads to be made to roughly correspond with the pattern shape, and thus produce a sizable added volume of chips.

Development of chips from oversize lumber has not been easy. Thousands of dollars have been spent in research and development. On the one hand there are the pulp mills who demand a certain type of high class chip. On the other hand is the lumberman who demands that sawmills produce the very highest grade lumber without tearing or degrading the board.

New Chip Blanker

Stetson-Ross feels that a reasonable solution to the problem has been worked out, as far as the West Coast species are concerned. The company has developed a chip blanker which produces highly acceptable chips from rough lumber just prior to final dressing by a planer. The machine is made as a sidehead chipper only, as a tophead chipper only, and as a combination sidehead and tophead chipper. Table I shows the horse-power ratings, feed rates, knives, and speeds for these three models.

Tests conducted at MacMillan & Bloedel's Somass Division, Port Al-

TABLE I

SPECIFICATIONS FOR THE TOPHEAD, SIDEHEAD AND COMBINATION CHIP BLANKERS

	Chipper r.p.m.	No. of Knives	Max. Feed Speed
Tophead Unit			
(Replaces Infeed Girt on Planer)			
100 h.p.	3600/1200	6	1050
80 h.p.	3600/1200	5	905
65 h.p.	3600/1200	3	540
40 h.p.	3600/1200	2	360
Sidehead Unit			
(Replaces Infeed Girt on Planer)			
65 h.p.	3600/1200	6	1050
40 and 50 h.p.	3600/1200	5	905
25 h.p.	3600/1200	3	540
15 h.p.	3600/1200	2	360
Combination Top and Sidehead Unit			
(Separate Standing Machine)			
100 and 65 h.p.	3600/1200	6	1050
80 and 50 h.p.	3600/1200	5	905
65 and 25 h.p.	3600/1200	3	540
40 and 15 h.p.	3600/1200	2	360

berni, B. C., produced a higher chip quality index than chips produced from slabs on their regular sawmill chippers. The width and length of chips is controlled by the cutterheads which operate on the climb milling technique, that is, rotating the head in the direction of travel by the lumber. Thus, chips are clean cut so that in the digester the liquor gets a chance to flow through the wood cells without disintegrating or exploding the chips.

Contrast this with chips produced with a cutter revolving across the face or edge of the board. In cases of this type, it has been observed that the ends of the chips are closed where the summer growth has been driven into the winter growth, with the results, reportedly, that the liquor does not penetrate the chips lengthwise. Then when it does, a so-called explosion occurs and the chips are broken into strips. It is also noted that with this method of cross-revolving cutters, chips that are produced, although controlled as to length, cannot be controlled as to width. The result is an excess of fines.

How It Works

In planning different sizes of lumber, the smaller sizes are run faster than the larger sizes. It is necessary to slow down the feed speeds on smaller sizes sometimes, too because of shorter lengths. This requires that the feed speeds be changed frequently during the day. It is necessary to control the speed of the cutterhead in connection with the feed speed of the planer in order to produce the length of chip desired. This is a must, and is done through a frequency converter from the driving motors. The frequency converter is a rather expensive piece of equipment, but is the only successful way known to correct chip length.

Stetson-Ross prefers to install chipper head units on motorized planers only. To attempt to equip a belt-driven planer with a chipper head unit would present a problem from belt slippage on the cutterhead. Consequently, specified chip length could never be maintained. Also, there are other problems involved.

Tests show that the chipper head works equally well on fir, cedar, hemlock, spruce, and pine. It has not been tested on hardwoods, but no reason is seen why it would not work on green hardwoods as well. Chips produced have been found suitable for use in hardboards, or other fiberboards, as well as for pulp.

In checking for chip volumes obtained, using a sidehead blanker only, two-inch material resulted in a chip volume by weight of 10.1 units (a unit presumably being the amount of chips contained in 190 cu. ft.—Ed.) on 200,000 lineal feet of lumber production. Breaking these yields down, the following results are obtained: 0.05 units of chips per 1000 lineal feet of two-inch thick material; 0.020 units per 1000 lineal feet per inch of width of one-inch thick material; 0.017 units per 1000 lineal feet per inch of width on scant sawn material.

Units Available

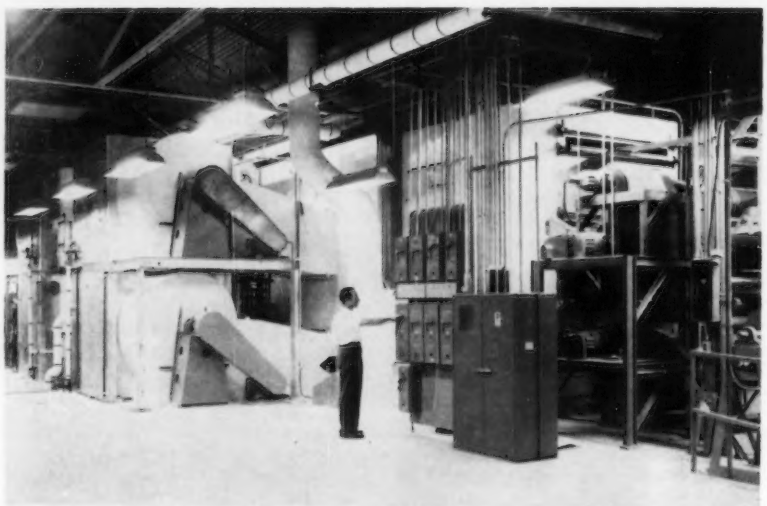
The cutterhead units in most cases are interchangeable with standard units now on Stetson-Ross planers. They can also be ground and jointed on standard Stetson-Ross grinding room equipment. This company also makes chip blanking equipment to fit other types of planers.

When either the tophead or sidehead chipper is used, the unit replaces the infeed girt on the planer and requires no additional space between the planer and feed table. However the combination chipper is a separate standing machine, and it may or may not require respacing of the planer and feed table in order to accommodate the unit.

While the next statement may be a little ahead of the subject of chip blankers, it is felt the time is not far off when many of the larger sawmills, as well as some of the smaller ones will install chip blankers on the green chains and run the green lumber to a size before it goes to the kiln load. This will probably accomplish two things: 1 get all of the lumber the same thickness, resulting in better sticking and more even drying; 2 getting more lumber on the kiln car and through the kilns at less cost.

Where could the mill man get a better mutual investment than this, both from a lumber and a chip standpoint?

Air Dryer Treats Vulcanized Fiber At Taylor Fibre Co. Plant



Taylor Fibre Co. has installed a 65-foot-long air dryer, designed for the treatment of vulcanized fiber, in its plant at Betzwood, Pa. Constructed by Frank W. Egan & Co. of Somerville, N. J., the unit will take webs up to 75 inches wide at speeds up to 50 f.p.m.

"Relaxed drying" of webs containing 65 per cent water is achieved as the material is guided over the specially designed carrier rolls in the dryer's four zones. The first two zones are equipped with humidity controls, and web tension throughout the dryer is controlled electronically.

Taylor Fibre Co. has installed the pre-dryer as part of its capital investment program designed to improve its vulcanized fiber. Relaxed drying improves flexibility and formability. Flexibility is important in applications such as abrasive discs. Ease of formability is required for sporting goods, trunks, cases, and material handling containers.

THE Langston Leader
PAPER MILL EDITION
Leadership...by design
SAMUEL M. LANGSTON CO. • CAMDEN 4, N. J.
OCTOBER, 1959 | *Published for the information of paper and board mills* | VOL. 1, NO. 5

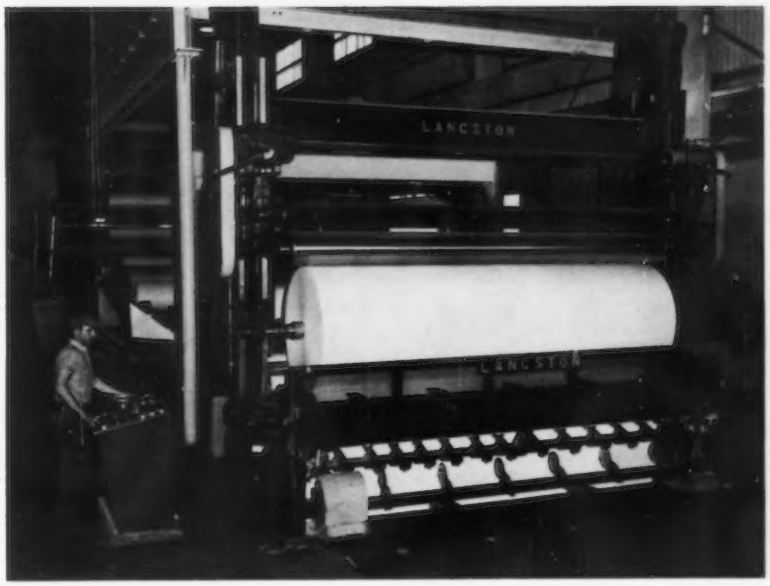
Achievement at St. Regis

FINISHING ROOM WORK IS REDUCED

Winder on Paper Machine Produces Clean Cut Rolls And Saves Rewinding Job

A paper machine winder by turning out shipping quality rolls of desired widths and diameters is reducing a finishing room operation at St. Regis Paper Company, Pensacola, Florida.

Before the new winder was installed on the No. 1 Fourdrinier, it was the practice, on stock intended for conversion to counter rolls, to wind off into jumbos to be slit and rewound to specifications in the finishing room.



IN OPERATION. Langston heavy-duty, 144-inch wide paper machine winder is reducing the finishing room slitting and winding job at St. Regis Paper Company, Pensacola, Fla.

Heavy Duty Machine

Now a wide variety of paper and board grades is slit and rewound on a heavy-duty, 144-inch wide, 72-inch diameter rewind slitter and winder, built and installed by Samuel M. Langston Company, Camden, N.J.

The new Langston winder is performing satisfactorily, according to St. Regis, turning out tightly wound shipping rolls of uniform density.

In converting orders at the paper machine, the Langston winder is handling paper and board grades ranging from 40 to 300 pound (24 x 36—500 basis). The equipment slits and rewinds rolls up to 60 inches in diameter and down to as narrow as 2¼-inch rolls of 48-inch diameters.

Versatility Features

The pushbutton control features of this machine—rider roll control, rewind shaft control, rewind shaft loader—contribute sufficient versatility to permit St. Regis to have a limited counter roll operation taking about 30 percent of the paper machine's production.

The winder is currently operating at about 2600-2700 feet per minute to suit the 900 fpm of the Fourdrinier. The Fourdrinier can attain 1200 fpm and the winder 3000 fpm.

Tight Shipping Rolls

The Langston winder's heavy-duty construction and precision manufacture are credited with producing a finished product of tight, clean-cut shipping rolls.

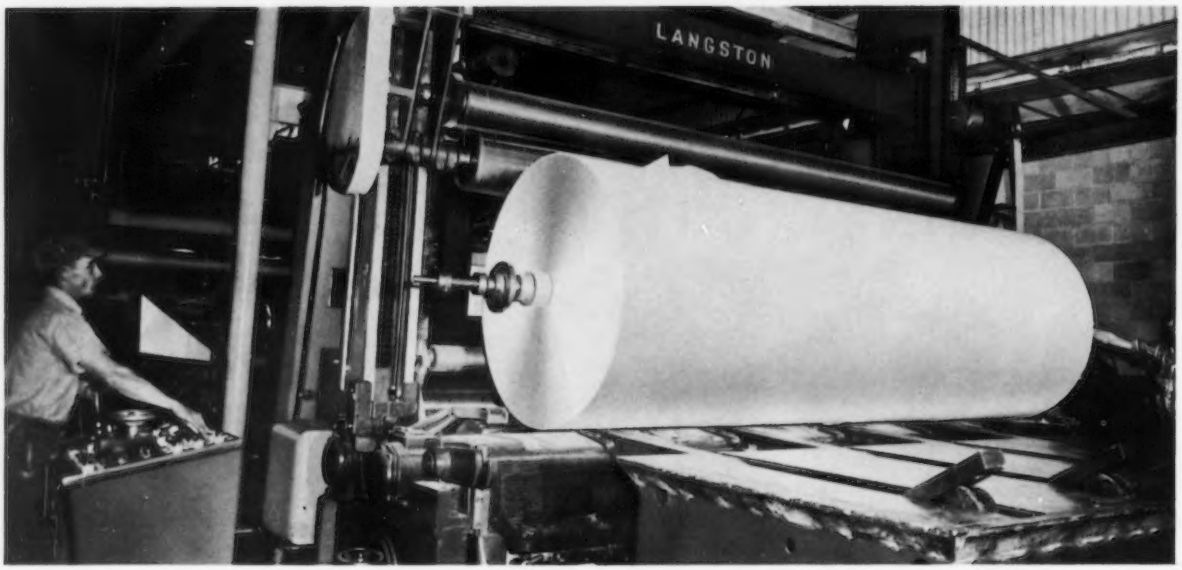
The winder is equipped with a patented roll density controller. This automatically regulates, throughout the buildup on the roll, the effective pressure exerted by the rider roll assembly. It provides uniform nip pressure between the sheet and the extra-heavy, 18-inch rewind drums—in conjunction with the driving effort of the rider roll and the rewind drums—thus assuring uniform density in the rewound rolls.

Langston Roll Drop

Contributing to overall operation efficiency are such features as the hydraulic actuation of raising, lowering and automatic loading of rewind shafts—ranging in diameters from three-inch to eight-inch—also the hydraulic roll ejector, nip guard and roll drop table.

The Langston roll drop table is a heavy duty, mill-type machine with a scissor-type, hydraulically powered lift

(Continued on Page 2)



ROLL EJECTION. Langston roll drop table is in position for rewound roll to be ejected and lowered to floor level. Pushbuttons at console control ejector, roll drop and bridging arms. Roll stops are automatically raised and lowered.

Winder on Paper Machine Saves Finishing Room Job

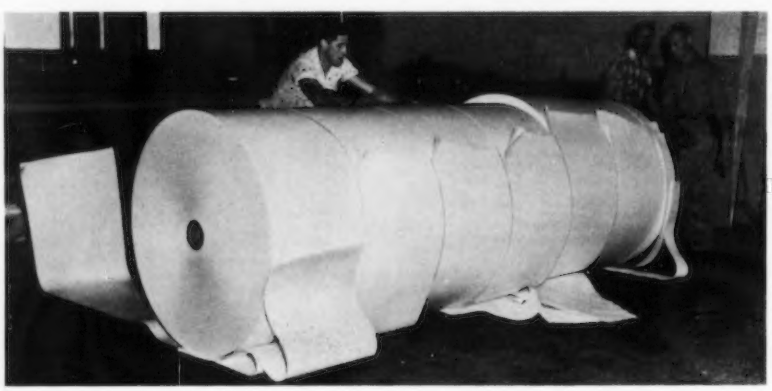
(Continued from preceding page)

with pushbutton controls from the winder console. It is equipped with automatically controlled roll stops. Arms that bridge between the roll drop and the winder are also pushbutton controlled.

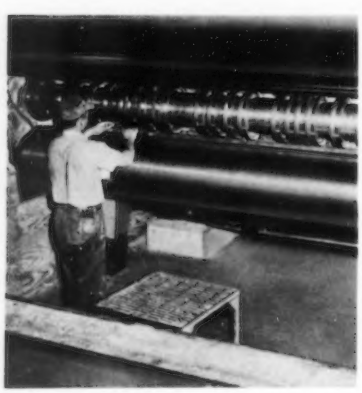
Box Section Construction

In addition air brakes are provided to bring the idler rolls and carrier drums to an immediate stop when winder power is shut off—enabling quick threadup and roll changes and contributing to the safety of operation.

The winder machine frames, section in design, are of heavy duty, cast construction. Roll shafts are centrifugally cast steel and balanced for high speed operation. Main winder drum bearings are Timken precision heavy-duty type and all other bearings are SKF heavy-duty. The drive is Westinghouse.



CLEAN SEPARATION. Shipping rolls of up to 60-inch diameters and down to as narrow as 2¼ inches with 48-inch diameters are slit and wound on Langston winder at St. Regis. They are of highly uniform density, shear cut and with easy, clean separation as shown above.



PREPARING SETUP. Operator shifts slitter heads into position for next run. Pit-type installation eases setup and speeds threadup.

Second Langston Installed

The winder is the second Langston to be installed at the St. Regis, Pensacola mill in the last three years. The first was a 94-inch winder on the Number Two cylinder machine.

It was the performance of the first winder in reducing waste and the number of imperfect rolls and in keeping maintenance downtime at a minimum that contributed to the decision to order the second Langston winder, according to St. Regis.

(Continued on Page 2)

Prices of Fibers

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	§90.00/ —	§80.00/ —	§90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	§157.00/162.50*		§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		§137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	§47.00/150.00	160.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED OCTOBER 20

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	$8.00/7.50	n.a.	n.a.	$7.75/7.50
3	7.50/6.00	$8.00/7.00	$6.75/6.50	7.25/7.00
4	6.00/5.25	6.25/5.75	6.25/5.25	6.75/6.25
5	5.25/4.75	5.00/4.75	4.75/4.50	6.00/5.60
6	4.75/3.50	4.50/4.25	4.00/3.25	5.00/3.75
7	3.50/2.50	3.50/2.75	3.00/2.75	3.00/2.75

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Oct. 26	Oct. 26	Oct.	Oct.
No. 1 Mixed Paper	$ 10.00/ 12.00	12.00/ 14.00	9.00/ —	13.00/ 15.00
No. 1 News	17.00/ 18.00	17.00/ 18.00	18.00/ —	16.00/ —
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	23.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	14.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	23.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	35.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ —
(Semi-chem. medium)	47.50/ —	47.50/ —	45.00/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	65.00/ 70.00	53.50/ 60.00	45.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	60.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	55.00/ 57.50	52.50/ —	45.00/ 47.50
Manila Tab. Cards	77.50/ 80.00	77.50/ 80.00	75.00/ —	75.00/ 80.00
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	47.50/ —	35.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	55.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	17.00/ —	— / —
No. 1 Books‡	25.00/ 27.50	19.00/ 21.00	36.00/ —	17.50/ 19.50

† Includes Time & Life; no coarse groundwood. § Not to exceed 10% of groundwood.

THE WHEELER ROLL CO.

EXPERIMENTAL

PAPER and COATING MACHINES

10 inches to 30 inches wide.

Variable Speeds

WHEELER ROLL CO.

Kalamazoo

KEEP YOUR PAPER CLEAN

Doyle PAPER CLEANER

- Assures manufacture of cleaner paper.
- Removes shreds, slitter dust, etc.
- Fully automatic in operation.
- Improves quality of paper products.
- For Sheets or Webs of any size.

WRITE FOR PAPER MILL BULLETIN PM-45

J. E. Doyle COMPANY

1220 West Sixth St. • Cleveland 13, Ohio
Telephone: CHerry 1-3939

DOW | **CHEMICALS...for a brighter paper picture**

Old shoes and old methods may be comfortable and temptingly easy to use. But in the cold, searching glare of production cost analysis it's the new or improved technique or equipment which most often walks off with the profit-honors. This is one in a series of advertisements to the paper industry highlighting chemicals and their more effective use in increasing production and improving product properties.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

ROUTE TO:

_____

_____

_____

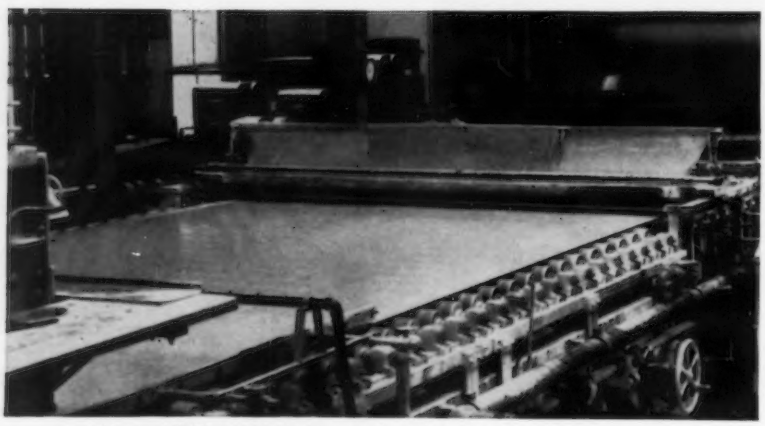
_____

FLOCCULANT BOOSTS FILLER RETENTION... CUTS WHITE WATER SOLIDS, STOCK LOADING

Here's a welcome chemical addition to any paper processing plant . . . and it comes with the finest of user references. It's Separan® NP10, an acrylamide-type polymer that does a bang-up job of rapidly flocculating water-dispersed solids. One outstanding paper process application is increasing filler retention on the wire.

Using a reduced quantity of filler to produce paper with a higher filler content and with increased ash content and basis weight is a neat trick—but it can be done readily when Separan NP10 is on the job! A dilute solution of this highly effective flocculant (in the order of 0.5 lb./ton) added to the furnish just prior to the headbox has been found to allow a cut of as much as 40% from the usual amount of stock filler loading.

One mill, turning out bond paper in weights ranging from 12 to 20 pounds, replaced a standard animal glue with Separan NP10 as filler retention aid. Basis weight of the paper immediately increased by from one to two pounds, ash content increased from 6.47% to 8.20%, and opacity was upped from 86.5% to 89.0%. Filler loadings were then reduced by 25% to bring ash content figures back down to 7.0% resulting in a combined daily cost saving for two machines of $195.00. Other case histories are available which show even more remarkable results in terms of cost savings, mill efficiency and improved quality of product.



Separan NP10 provides both economic and property advantages for paper manufacturers by increasing filler retention at lower filler loadings.

The high retention efficiency of Separan NP10 far overshadows that of any of the other commonly used materials, and its activity reaches a peak at much lower levels of concentration. This organic polymer is in the form of white granules which are readily water-soluble; it may be stored as a stock solution in water without need for a preservative.

The use of Separan NP10 in papermaking furnishes results in the attachment of pigments, size, fiber fines, etc., to the fibers together with some flocculation. This results not only in increased furnish pick-up but in a more uniform dispersion of the components through the sheet, less two-sidedness and better opacities with the same pigment loadings.

Separan NP10 is an improved version of an elder brother Separan 2610. It exhibits substantially greater uniformity, purity and ease of use. Most important, it's being produced in quantities sufficient to supply the needs of

Brochure on Separan NP10 provides clear solutions to water problems.

paper mills everywhere. There's a wealth of information in a brochure entitled "Separan in the Pulp and Paper Industry". We'll be happy to send you a copy.

POLYOLS

Softies add hard-headed profits

Paper manufacturers searching for improved plasticizers, humectants or paper lubricants find it pays to come first to Dow—"the men that make the most of them". In the manufacture of crepe, tissue, glassine, parchment and waxed papers, Dow glycerine—one of the most widely used members of the Dow polyol family—provides the needed softening, as well as helping to reduce shrinkage, and offers extremely low toxicity. Makers of food packaging film also depend on Dow propylene glycol for its highly effective plasticizing action and low order of toxicity.

Dow offers the world's widest line of polyols, including glycerine, diethylene glycol, dipropylene glycol, low molecular weight polyglycols, and many others. In this extensive family will be found softening agents tailormade to the needs of the paper industry. These dependable chemicals offer a wide range of properties including low volatility, defoaming ability, water solubility, low toxicity, solvent power, lubricity and varying degrees of hygroscopicity.

There's an informative file folder available describing the Dow family of polyols. If you'll ask for a copy of "World's Widest Line of Polyols", we'll see that it gets in the mail to you at once.

"BASIC" VERSATILITY . . . five kinds of economy

Dow, one of the country's major producers of caustic soda, provides a choice of five forms for maximum economy in any size operation. Dow caustic is available as solution, solid or flake. Small-quantity users often prefer to work with solid caustic or one of the flaked forms . . . *regular flake*, or the dustless, free-flowing *ground flake*. For those who require large quantities, the 50% or 73% solutions are low in cost and provide the greatest convenience and economy in handling.

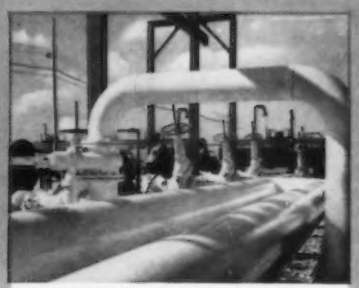
Any quantity, from drums to tank cars, can be shipped quickly from any of Dow's four producing plants and nine distribution terminals across the country.

OTHER DOW CHEMICALS *of economic importance*

MURIATIC ACID
New! Fact-filled handbook about Dow muriatic acid. Full of essential information that makes it an important reference for everyone concerned with pulp and paper processing.

MAGNESIUM HYDROXIDE
Now practically any species of wood can be used as pulping feed. Dow magnesium hydroxide and the new Magnefite process yield high grade pulp, increased digester house capacity.

DOWICIDE
Protect lap stock and coatings against mold growth the *right* way with Dowicide® preservatives. On your company letterhead, write for a copy of the latest technical bulletin.



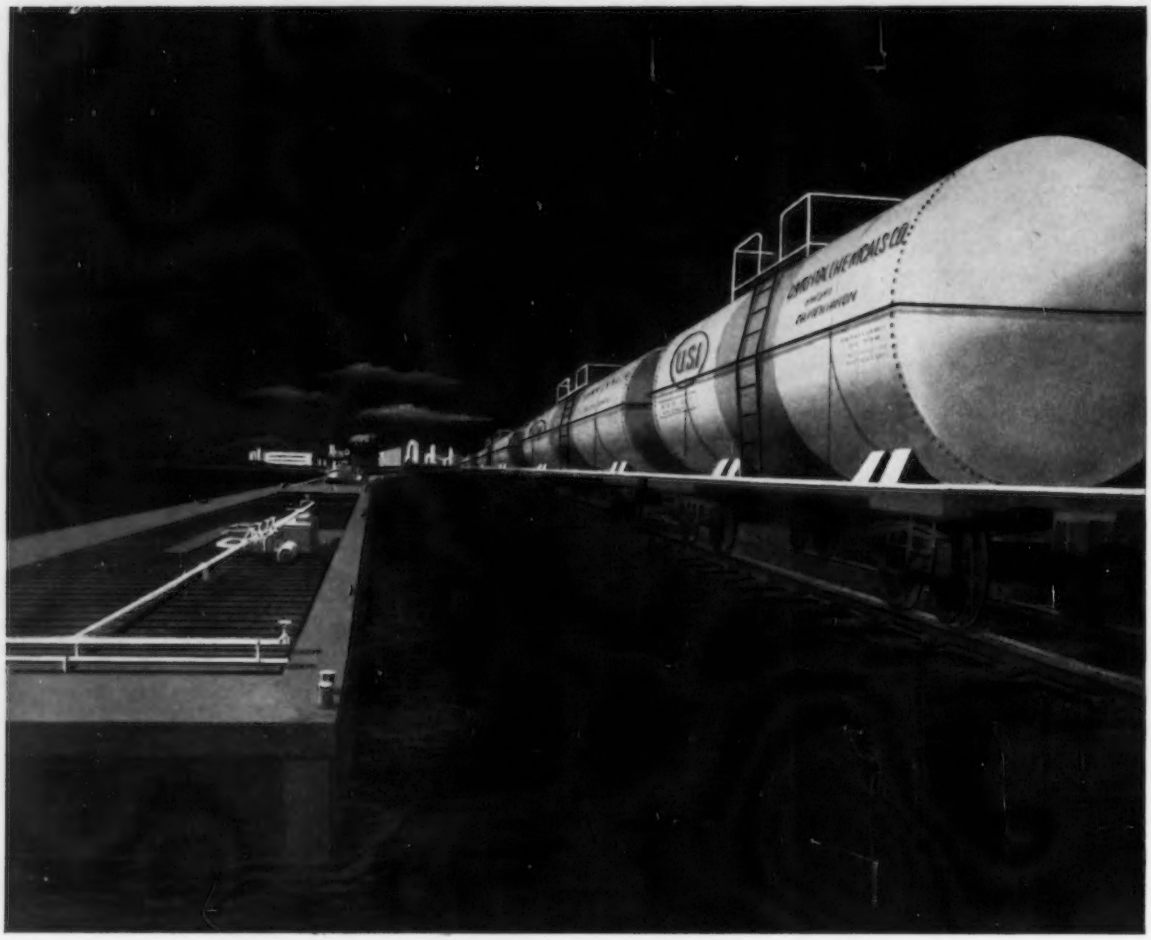
AMMONIA
Ammonia base cooking still offers cost advantages from a conversion standpoint. Dow assures abundant supplies for present and future needs of the pulp and paper industry.

If you're looking for ways to improve processing operations, lower operating costs and boost product quality, Dow is a good place to start. To find out more about how Dow chemicals and Dow Technical Service assistance can be put to work for you, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 942DP11-2

DOW CHEMICALS basic to the pulp and paper industry

Chemical Raw Materials • Pulping and Bleaching Chemicals • Preservatives
Plasticizers • Glycols and Derivatives • Methylcellulose • Emulsifiers • Solvents
Aromatics • Caustic Soda • Muriatic Acid • Chlorine • Soda Ash • Ammonia

THE DOW CHEMICAL COMPANY, Midland, Michigan DOW



U.S.I. CHLORINE and CAUSTIC SODA

. . . from Huntsville, Alabama

Two U.S.I. plants, conveniently located at Huntsville, Alabama, can now supply your chlorine and caustic needs.

Make U.S.I. *your* preferred supplier of these paper chemicals. Here are some profitable reasons why you should:

- Your orders will arrive at a U.S.I. plant almost as soon as they leave your own—through U.S.I.'s automated order-handling system based on an extensive teletype network.
- Your orders will be delivered rapidly and without complications — because of the convenience of the Huntsville location and the efficiency of the order-handling system.
- You'll be working with a 50-year old chemical manufacturing company with a reputation of service to its customers throughout that half century.
- You'll be working with a large and continually-growing company that today has warehouses, plants and sales offices in 27 locations across the nation.

Liquid chlorine is shipped from Huntsville in tank cars. Commercial grade 50% liquid caustic soda is shipped in tankcars, tank trucks, barges. Other U.S.I. plants supply sodium peroxide, ammonia, polyethylene.

The coupon below provides a convenient way to find out more about U.S.I.'s supply and service capabilities. Why not drop it in the mail now while you think of it?

U. S. Industrial Chemicals Co., 99 Park Ave., New York 16, N.Y.
We'd like to know more about U.S.I.

- ☐ Send brochure "National Distillers Expands in the Chemical Industry"
- ☐ Send information on your Automated Order Handling System
- ☐ Have a salesman call for an appointment to discuss chlorine and caustic soda
- ☐ Put me on your mailing list

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Company_____

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U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
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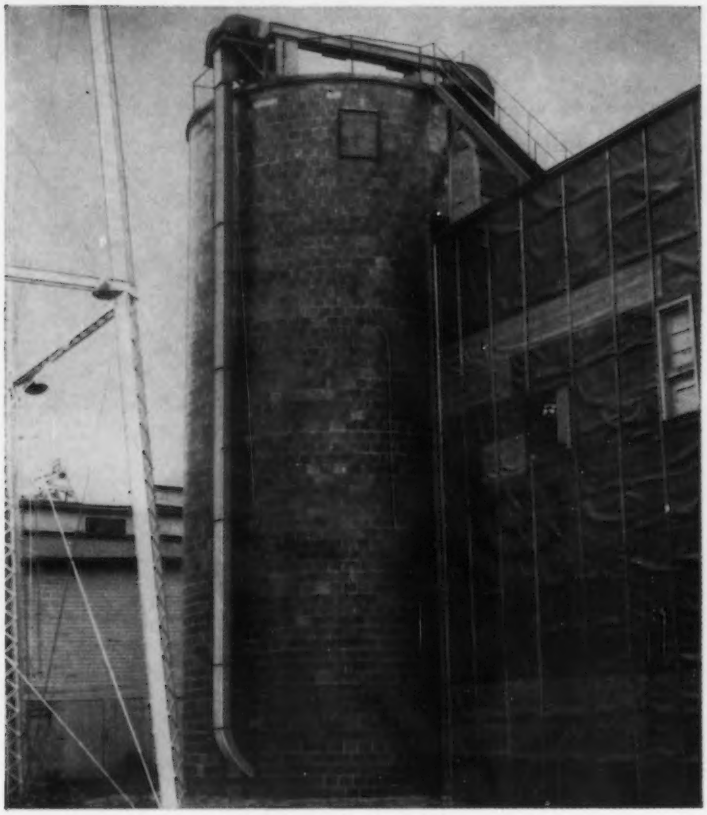
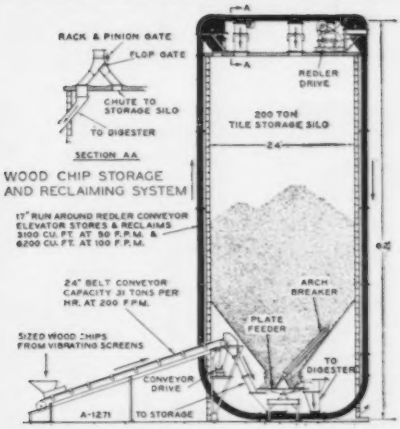
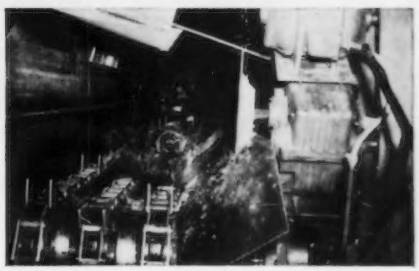
STEPHENS-ADAMSON




RACK & PINION GATE
FLOP GATE
CHUTE TO STORAGE SILO
TO DIGESTER
SECTION AA
WOOD CHIP STORAGE AND RECLAIMING SYSTEM
17" RUN AROUND REDLER CONVEYOR ELEVATOR STORES & RECLAIMS 3100 CU. FT. AT 50 F.P.M. & 6200 CU. FT. AT 100 F.P.M.
24" BELT CONVEYOR CAPACITY 31 TONS PER HR. AT 200 F.P.M.
SIZED WOOD CHIPS FROM VIBRATING SCREENS
CONVEYOR DRIVE
A-1271
TO STORAGE
REDLER DRIVE
200 TON TILE STORAGE SILO
24'
ARCH BREAKER
PLATE FEEDER
TO DIGESTER

Flow of material diagram above shows a wood chip storage and reclaiming system engineered by Stephens-Adamson.



The S-A triple chain log conveyor picks up logs from a woodyard flume and starts them on their way to the chipper.

EFFICIENT, PROFITABLE LOG & WOOD CHIP HANDLING

The digesters discharge chips into a hopper equipped with a 5-foot diameter two-stage circular bin discharger shown above. Arch-breaker arm keeps chips flowing through discharge outlet.

Arch-breaker arm inside circular bin discharger, above, insures steady flow of chips to REDLER conveyor-elevator.

Over a half century of know-how has been applied by STEPHENS-ADAMSON in engineering and building the most efficient and profitable paper pulp handling systems for storing, reclaiming and conveying to processing. S-A engineering ingenuity is displayed in the efficient handling of logs and wood chips in the paper pulp application illustrated.

From the triple chain log conveyor picking up logs from the woodyard flume to the steady feed insured by the circular bin dischargers at the discharge hoppers of the digesters . . . from the vibrating screen to the vertical closed-circuit REDLER lifting chips 62 feet to discharge points in the silo . . . S-A engineering know-how is applied to save time — cut costs and speed profitable material handling for the pulp and paper industry.

Write for Bulletins 358 and 250

S-A
MATERIALS HANDLING PRODUCTS
SEALMASTER® BALL BEARING UNITS

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PLANTS LOCATED IN: LOS ANGELES, CALIFORNIA • CLARKSDALE, MISSISSIPPI
BELLEVILLE, ONTARIO

PAPER PEOPLE

P. L. MacDougall

MacDougall Joins Stora In New York Sales Post

Peter L. MacDougall has been appointed manager-pulp sales for Stora Kopparberg Corp.

Mr. MacDougall, a graduate of Bishop's College School, Lennoxville, Quebec, was formerly manager of pulp sales for Howard Smith Paper Mills, Ltd., in Montreal. During the war he saw service with the Royal Rifles of Canada, which included nearly four years in a Japanese prison camp.

In his new post, Mr. MacDougall will make his home in New York and will be responsible for Stora's market pulp sales in North America. This will include, in addition to Stora's well-known Swedish brands, Nova Scotia Pulp Ltd., 350 ton per day bleached sulphite mill presently under construction at Stora, Nova Scotia.

Alling Paper Promotes Two to Top Posts

Theodore R. Sucher, Jr., and Alfred C. DuPuy were named to top posts in The Alling Paper Co. at a recent meeting of the board of directors.

Mr. Sucher was elected president and treasurer, succeeding the late Harry M. Alling who held the post since the founding of the company in 1946. He was advanced from vice president and assistant secretary to his present position.

Mr. DuPuy was named vice president. He formerly held the position of general manager and assistant treasurer.

Budd Succeeds Gayou At Brainerd Mill

Philip W. Budd has been appointed manager of The Northwest Paper Co., in Brainerd, Minn., mill, succeeding Leo J. Gayou who has resigned effective October 15.

Mr. Budd was born and received his early education in northern New York state. He graduated from the State College of Forestry at Syracuse University with a B.S. degree in pulp and paper. He has been employed by The Northwest Paper in a variety of positions since 1940 with his most recent capacity that of production manager here.

Mr. Gayou has announced he will take an extended vacation before making any plans for the future. He has been mill manager here for about 10 years.

Champion Signs Contracts For Research Building

Construction contracts were signed late in October for a new research building for The Champion Paper and Fibre Co. at Hamilton, Ohio, to cost approximately $175,000. Construction is to start immediately. It will be next to Champion's new general office building, already under way on a 68-acre tract. The research building is planned for occupancy in 1960, well before the general office building is completed.

If other plans materialize, Champion officials said, the new facility may become the first unit of a research center on the same site which would include two more research buildings matching it in size and layout and possibly a pilot plant for experimental papermaking machinery. The completed research center, however, might take several years to plan and erect.

Search Named Personnel Mgr. at Chillicothe

Roger Search has been named employment manager of the Chillicothe Division of the Mead Corp., Chillicothe, Ohio.

Mr. Search majored in personnel management at Ohio State University, where he received a degree in business administration in 1958. In June 1958 he was employed as a personnel trainee at Mead's Chillicothe Division. He remained on the training program until August 10, 1959, when he became the division's employment manager.

J. d'A. Clark

Clark to Teach At Oregon State College

James d'A. Clark, who for the past few years has lived in Victoria, B.C., has been appointed Professor of Pulp and Paper Science at Oregon State College in Corvallis. He will be concerned mainly with graduate and post-graduate work on fundamental pulp and paper problems and hopes to attract more students to the industry with its help in establishing additional fellowships.

A portion of his time will continue to be devoted to consulting work especially in the fields of pulps and stock preparation, air deposition of fibers and structural boards from wood. A large new mill for his wafer-board process is presently being engineered for a central location in Saskatchewan, to start up next year.

Three to Retire from Penobscot

The board of directors of the Penobscot Chemical Fibre Co. is lowering its previous retirement age of 70 years, and, as a result, Edward W. Keith, vice president and manager of mills, Henry S. Hooper, technical director, and Ora B. Stevens, yard superintendent, are retiring from the service of the company as of November 1, 1959.

Mr. Keith, previous to becoming mill manager in 1954, was superintendent of the Soda Division and has 35 years service with the company. Mr. Hooper has 41 years of service, and Mr. Stevens 49 years.

CONTINENTAL CAN CO.

orders a

KAMYR

continuous cooking unit

for its new

bleached Kraft mill.

Capacity 350 AD tons per day

For Information Contact KAMYR INC., Hudson Falls, N. Y.

West Coast Representative: A. H. Lundberg, Inc., 7835 S. E. 30th St., Mercer Island, Washington

Allen Joins Thilmany In Newly Created Post

E. R. Sutherland, secretary-treasurer of Thilmany Pulp & Paper Co., has announced that Richard V. Allen will serve as controller, a new position in the company. Mr. Allen is a certified public accountant and has spent the last seven years with Arthur Andersen & Co. in Milwaukee. His education includes a B.S. degree in business administration from the Babson Institute of Business Administration.

Also announced is the election of W. W. Owens as assistant secretary of the company. Mr. Owens, a School of Commerce graduate of the University of Wisconsin, joined Thilmany in 1943. He has served as office manager and is presently chief accountant.

Kirk Joins St. Croix Control Dept. Staff

Joseph N. Kirk has joined the control department staff of St. Croix Paper Co., Woodlands, Me., as paper mill control engineer.

Mr. Kirk, a native of Bar Harbor, is a graduate of the University of Maine in the Class of '55 with a degree of B.S. in pulp and paper technology. Following graduation he worked for one year in Niagara Falls, N. Y., and then returned to the University of Maine for an extra year to get his B.S. in chemical engineering. For the past two years he has been employed by Solway Process Division of Allied Chemical at Syracuse, N. Y.

Quist Named Project Engineer at Watervliet

The Watervliet, Mich., division of Hammermill Paper Co. has appointed Jozua Quist project engineer, to assist in experimental work on design and development of paper coating equipment.

Mr. Quist, a native of the Netherlands, has been in the United States since 1956 with the West Virginia Pulp and Paper Co.

Senator Randolph to Address NPA Meeting

Senator Jennings Randolph, of Elkins, W. Va., will be the closing speaker for the 27th Annual Meeting of National Paperboard Ass'n. to be held in New York City on November 10 and 11, 1959, Albert W. Luhrs, executive manager of the association announced. Long prominent in public affairs Senator Randolph was elected to Congress in 1932 and served in successive Congresses until 1946. From 1946 until 1958 he was director of Public Relations for Capital Airlines and was elected to the United States Senate on November 4, 1958.

Senator Randolph will address the group on "The Businessman in Public Affairs."

B. F. Moats, Jr.

Moats Joins Fitchburg As Marketing V-P

Benjamin F. Moats, Jr., has been named vice president in charge of marketing for Fitchburg Paper Co.

Mr. Moats is a graduate of Dartmouth and the Tuck School of Administration and Finance and took advanced work at the University of Maryland. Most recently he was associated with McKinsey and Co., New York City management consultants. While with McKinsey, he worked on organizational and marketing studies with both domestic and international firms.

"AIN'T YA EVEN GLAD I WASN'T HURT?"

Scott Names Harris To New Mobile Post

Walter E. Harris, currently a senior project engineer in the staff engineering department of Scott Paper Co., Chester, Pa., has been named to the position of project coordinator for the construction phase of the 1960 expansion program at Scott's Mobile mill. In this position he will be located at the Mobile plant.

Mr. Harris joined Scott Paper Co. in December 1945 as an instrument mechanic in the Chester plant, and in January 1952 was named shop foreman of the instrument maintenance department.

In July 1956 Mr. Harris was promoted to his current position of senior project engineer in the staff engineering department.

NPA Elects Lowe Vice Pesident

Malcolm B. Lowe, vice president of Lowe Paper Co., Ridgefield, N. J., has been elected a director of the National Paperboard Ass'n.

A native of Fitchburg, Mass., Mr. Lowe started his career in the paperboard business at an early age. From 1906 to 1913 he spent his summers working in the mill or office of the Lowe Paper Co., and upon his graduation from Princeton became associated with the company on a full-time basis as secretary-treasurer. During World War I, he served in the U. S. Army overseas and returned to Lowe Paper in charge of sales, the purchase of board, and finance.

Falls P&P Names Marsden Technical Director

The promotion of Paul F. Marsden to technical director of the plant of Falls Paper & Power Co., Oconto Falls, Wis., has been announced. Mr. Marsden has previously held the positions of process control engineer and, most recently, pulp mill superintendent there.

Samuel P. Moore who for many years has been employed in the technical control departments at Scott Paper Co. mills at Chester, Brunswick, Hoboken and Oconto Falls, will remain as assistant technical director at Oconto Falls.

Lewis Rebitski has been promoted to the position of pulp mill superintendent vacated by Paul Marsden.

Falls Paper & Power Co. is a wholly owned subsidiary of Scott Paper Co.

BLANCOPHOR®

can make your white papers as bright as this sheet

Blancophor HS and ES optical brighteners in your white papers create a remarkably blue-white, fluorescent finish that adds visibly to the sales appeal of your sheet. The Blancophor brighteners, in liquid or powder form, can be added either *as is* to the pulp, or in solution to the surface. Newly-developed Blancophor ES brands are particularly recommended for beater use at low pH (below 5.0 at the wire), because they are more stable. Use of Solar® tinting colors in the brightened pulp will provide a range of hues extending from greenish-blue to reddish-violet, thus making available a variety of brilliant white tints.

NOTE: This sheet has been whitened with Blancophor ES-73.

Ask for samples and complete technical information at any Antara office.

gaf gdc ANTARA

from Research to Reality

GENERAL DYESTUFF COMPANY · ANTARA CHEMICALS

SALES DIVISIONS OF GENERAL ANILINE & FILM CORPORATION

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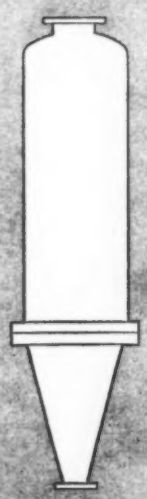
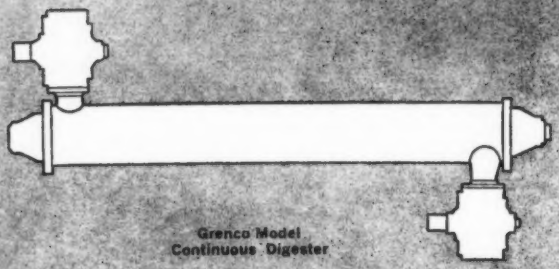
Blancophor brighteners and Solar Colors, manufactured by General Aniline & Film Corporation, are sold outside the United States under the trade name of "Tintofen" by distributors all over the world.



Rapid Cycle
Batch Cooker



Grenco Model
Continuous Digester

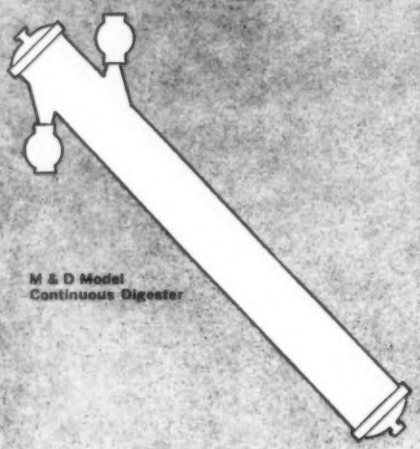
Bauer DIGESTERS

A Complete Line for All Cooking Requirements

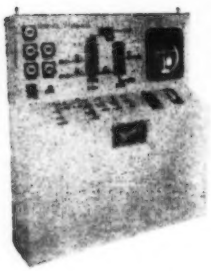
Bauer's modern line of digestion equipment is engineered specifically to help you meet modern market demands.

Featuring automatic operation, accurate control and high efficiency, this equipment includes the Rapid Cycle batch cooker and two types of continuous digesters—the Bauer M & D model and the Bauer-Grenco model. Both continuous models are equipped with the famous Bauer-Grenco rotary valve. Optional electronic controls assure maximum uniformity in any type process.

Bauer is the only supplier that can offer you, on an impartial basis, the type digestion equipment best suited to your particular needs. For more details, ask for Bulletin P-30.



M & D Model
Continuous Digester



Electronic Controls (Optional)

Grenco Rotary Valve
for Continuous Digesters

THE BAUER BROS. CO.

1758 SHERIDAN AVENUE
SPRINGFIELD, OHIO

PJT NEW LITERATURE

A-C Motor Control Digest

Includes descriptive, pricing, technical and engineering information on its complete line of motor controls. A quick reference selector guide at the front of the digest makes it easy to find any item. 162p Book. Available upon request on company letterhead. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

Anti Moisture Treatment for Electrical Equipment

Tells how CRC 2-26 works, its benefits, advantages and applications, as well as factual case histories and details on its physical specifications. Folder. Corrosion Reaction Consultants, Inc., 116 Chestnut St., Philadelphia 6, Pa.

Flexographic Printing Press

Describes new developments found on this six color flexographic press, designed to meet today's requirements for higher speeds and greater accuracy. Folder. Paper Converting Machine Co., Green Bay, Wis.

Lunkenheimer Oilers and Oil Controls

Describes bottle oilers, oil cups, and constant level oil controls. Also contains application data and dimensional specifications. Circular 580. Lunkenheimer Co., Box 360, Cincinnati 14, Ohio.

New D9 Series E Tractors

Gives production and mechanical advantages of this series and features of the exclusive new power shift transmission. Form 33544. Caterpillar Tractor Co., Peoria, Ill.

Power-Set Outriggers

Shows how Power-Set outriggers work and what they will do. These are the first to use curved beams with attached floats that move out and down simultaneously to automatically adjust to ground level. Folder. Thew Shovel Co., Advertising Dept., Lorain, Ohio.

Panalarm Annunciator Systems

Provides the most comprehensive single source of information on annunciator systems ever published. Also includes engineering data on components and related equipment. Catalog 100C. Panalarm Div., Panellit, Inc., 7401 N. Hamlin Ave., Skokie, Ill.

Visi-Flo Sight Glass Indicator

Describes Model 640 which is a straight-through type with double windows of heavy plate glass on opposite sides with leak-proof gaskets. Also includes dimensions, illustrations and engineering data. Bulletin F-6. OPW-Jordan, 6013 Wiehe Rd., Cincinnati 13, Ohio.

Weight of Bulk Materials

Defines control capabilities of automatic weighing systems, and provides an illustrated chart of the major components. A page is devoted to typical automatic process control applications. Catalog 14. Weighing & Control Components, Inc., 812 E. County Line Rd., Hatboro, Pa.

Challenger 100-120 Lift Trucks

Tells how to achieve fast, low-cost handling of 10,000 to 12,000 pound loads by using these lift trucks. They are the first specifically engineered for handling this range. Brochure. Hyster Co., P. O. Box 847, Danville, Ill.

Disston Saws and Cutting Tools

Announces the revision of four catalog sections which are available singly or in combination by writing Disston Div., H. K. Porter Co., Philadelphia 35, Pa.

Tree Crusher Series G-40

Describes this self-propelled machine which in one operation knocks down and chops up small trees. Also lists general data and some of its outstanding operating features. Bulletin 203. R. G. LeTourneau Inc., Longview, Tex.

General-Electric Recorders

Provides buying information on complete line of recording instruments, including dimensions and chart speeds, operating specifications, applications, features and accessories. Bulletin GEA-6933. General Electric Co., Schenectady 5, N. Y.

Sellers Rotor Jet

Describes quick and economical method for thorough cleaning of entire inside surfaces of tanks, regardless of size or shape. Also includes application information and essential specifications. Bulletin 432. Sellers Injector Corp., 1600 Hamilton St., Philadelphia 30, Pa.

Spray Type Deaerating Heaters

Discusses many aspects of the process and equipment, including principles of deaeration, deaerator operation, standard designs, and design features and accessory equipment. Bulletin WC-101C. Graver Water Conditioning Co., 216., W. 14th St., New York 11, N. Y.

Tisco Tractor Repair Parts

Illustrates the Tisco line of bulldozer sprocket rims, tractor pads, end bits, and blades. Also describes procedures for rapid installation of these sprocket rims. Brochure. Taylor-Wharton Co., High Bridge, N. J.

The Care and Operation of Zeolite Softeners

Covers bacterial fouling, deposits encountered and operational factors in relation to this equipment. Also tells how exchange materials should be handled to maintain maximum efficiency and longer life. Data Sheet. Betz Laboratories, Inc., Gillingham & Worth Sts., Philadelphia 24, Pa.

TMI for Good Measure

Cover precision motorized and manually operated dead weight micrometers for the most accurate measurement of paper, film, foil etc. Three Brochures. Testing Machines, Inc., 72 Jericho Turnpike, Mineola, N. Y.

AccuRay On-Stream Instrumentation

Contains information on all process industry measurement and control equipment manufactured by them. Also includes specifications, applications and operating characteristics. Bulletin PI-959. Industrial Nucleonics Corp., 650 Ackerman Rd., Columbus 14, Ohio.

Thwing-Albert Testing Instruments

Provides illustrated sales copy on testing instruments for paper, plastic, textiles, light metals and other materials. Form P-560. Thwing-Albert Instrument Co., Penn St. at Pulaski Ave., Philadelphia 44, Pa.

Tergitol Surfactants

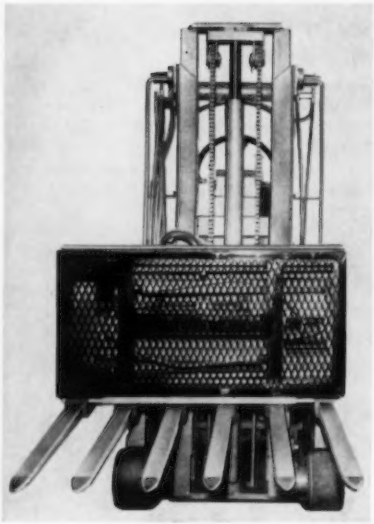
Contains extensive data for eight nonionic and four anionic Tergitol surfactants, including selection, solubilities, properties, formulations, applications, performances, specifications and test methods, shipping, bulk storage, and physiological properties. Also includes detailed bibliography and reference section. 44p Booklet. Union Carbide Chemicals Co., 30 East 42nd St., New York 17, N. Y.

PTJ NEW EQUIPMENT & SUPPLIES

Push-Off Device for Unloading Fork-Lifts

This special attachment is specifically designed and manufactured for establishments using a system whereby unit loads are handled in process and placed in storage on pallets but are shipped without pallets, says Lewis-Shepard. The take-it or leave-it pallet is basically a standard pallet with the addition of 4 or 6 two-inch square stringers equally spaced and nailed across the top boards.

The multi-purpose equipment is capable of handling the palletized unit loads in process and storage and also the non-palletized loads during shipment. During process and in storage the palletized loads are handled in the conventional manner. When loading carriers, the multiple-tined forks are slid between the small stringers on the top of the pallet and the load raised off. The load is then moved to the carrier and pushed off the forks.



For further information, write to Lewis-Shepard Products, Inc., Dept. R9-31, 125 Walnut St., Watertown 72, Mass.

Guillotine Conveyor-Loader One-Man Operation

Robert Jayne, Route No. 1, Beaver, O., has developed a simple and inexpensive powered conveyor that is capable of loading a pulpwood truck to a capacity of 3 cords in 45 minutes, reports the American Pulpwood Ass'n. in its Technical Release No. 59-R34.

The 22-ft. long conveyor is powered by a 4-h.p. Clinton engine which is mounted on the under side of the conveyor at the end that rests on the ground. Two V-belts from the motor operate the drive shaft which is simply an axle with sprockets at each end which turns the endless chains of the conveyor. Tensioning of the V-belts is by means of a screw shaft connected to the motor mount. The two endless chains have opposing 5-inch metal pegs welded to the chain at 3-ft. intervals. These pegs serve to hold the pulpwood in place as it is conveyed up to the truck. At the upper end of the conveyor is another axle and sprocket set which is merely an idler arrangement to change direction of movement of the chains. The conveyor is raised and lowered by a hand operated "guillotine" which is positioned by a single cable operated by a hand crank. Supporting the cable is a center piece bolted to two 16-ft. A-frames. The entire rig can be taken apart and loaded on a truck in a matter of 2 hours. It takes the same length of time to reassemble it for operation, states APA.

It has not been necessary for Jayne to change his present logging methods to effectively use this conveyor. The conveyor merely supports his economical tree-length operation and increases the man-day production as well as take most of the drudgery out of the loading.

Loading is done by rolling individual pulpwood logs onto the conveyor by hand. By raising and lowering the "guillotine" and by positioning the truck under the "guillotine" during the loading operation, Jayne is able to quickly and gently load the truck.

You'll get extra strength for all your lines when you add Accostrength Resin to your process—especially in cases where critical specifications must be met.

And, Accostrength gives you 3 additional benefits...

1. Accostrength improves wet web strength—minimizes costly paper breaks in the wet end of the machine. Customer runs have proved this too.

2. Accostrength allows greater use of shorter hardwood fibres to meet strength tests. Saves you money, here!

3. Accostrength improves draining on wire—therefore requires less steam in the dryers permitting machine speedup and increased paper production. Another money saving feature!

For full information about Accostrength, write Cyanamid for Technical Bulletin #33.

AMERICAN CYANAMID COMPANY CYANAMID

PAPER CHEMICALS DEPARTMENT, 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

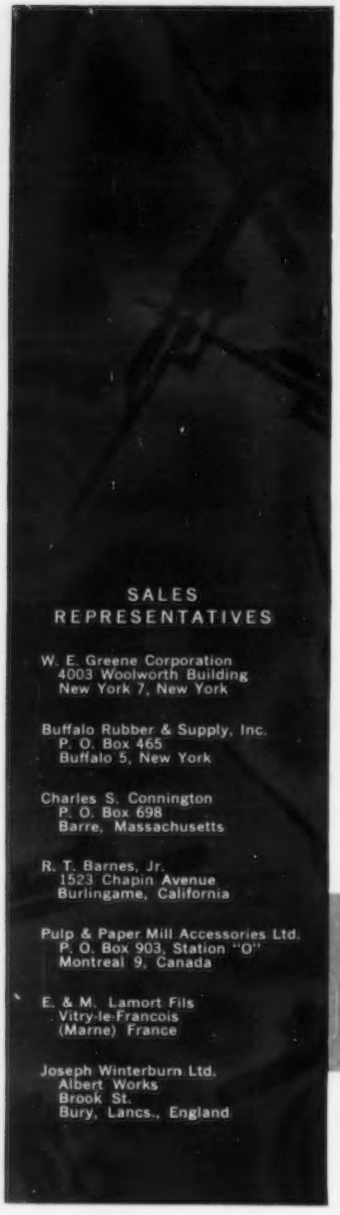
Fluorescent Brighteners Stable to Low pH

The fluorescent hue of the Blancophor ES (—31 liquid, —73 power) brighteners is blue with a slightly greenish cast, reports Antara Chemicals. These fluorescent tints are water-soluble and exhaust onto cellulosic fibers.

Because of high stability to precipitation by alum at low pH values (5.4—4.2), these optical whiteners are particularly effective when used as beater additives in the manufacture of hard-sized or high wet-strength sheets. They can be used on fully bleached pulps and on any others having a brightness of 70 or better. Blancophor ES-31 may be poured directly into the beater furnish at the rate of ½ to 12 lbs/ton A.D. fiber. The powder form is sufficiently water soluble, says Antara, that it may be added directly to the pulp without the risk of deposition of undissolved particles or of uneven exhaustion. Blancophor ES-73 should be added at the rate of ¼ to 6 lbs/ton A.D. fiber.

Both brighteners may be applied to the surface of paper and board by means of a calender, dip tub, size tub, or size press, as an aqueous solution, alone or in combination with materials such as starch, carboxymethyl cellulose, alginates, methylcellulose, glue, and latex. ES-73 power should be predissolved before incorporation into the surface treating solution.

Other characteristics reported include: odor, mild (for 31), non-discernible (for 73); solubility in water at 25°C, 10 per cent for ES-31, 1 per cent for ES-73; pH of solutions, 9.0 or higher; solidification point, 19°F; specific gravity of ES-31, 1.160, and bulk density of ES-73, 1.15, at 25°C; appearance (25°C), clear, dark amber liquid, or fine yellow powder. Both whiteners must be protected from undue exposure to light. Further information is available from Antara Chemicals, 435 Hudson St., New York 14, N. Y.



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There's more to a Lodding Doctor than meets the eye

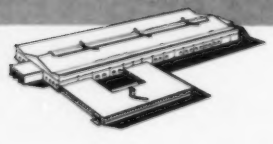
Few qualifications for manufacturing count more than experience. And when experience has been concentrated within a specialized line of endeavor it adds value to the product.

Lodding Doctors carry that extra value derived from experience — experience accumulated over thirty years of specialization in the manufacture of doctors, doctor blades, blade holders and their accessories. During this period, Lodding has built and installed doctors for every conceivable doctoring application, under all conditions and of every type and size, up to and including the Great Lakes Paper Company's 340 inch newsprint machine.

Installations of Lodding Doctors are found in nearly every paper mill in this country and in many mills abroad. Each was precision engineered and precision manufactured for the specific roll being doctored.

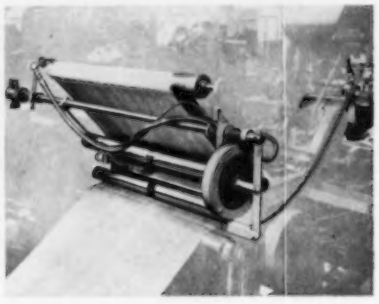
Doesn't it make sense to rely on specialized experience? Most mills have found that it does. Next time, get Lodding Doctors. Then you'll profit too.

LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS



Edge Guide Units Hold Glue Seam

A saving of 30 tons of paper a year with one Tidland Glue Seam Edge Control Unit on a bag machine



has been reported by one user, according to A. T. Williams, president, Tidland Machine Co., P. O. Box 1014, Camas, Wash.

Several West Coast mills have operated a full complement of these units for over a year without maintenance or failure. They are said to be capable of holding a glue seam to less than .030 inches variation.

The vacuum and spring controlled edge guide units for use in glue line applications on bag machines or similar converting processes are patented, adds Tidland.

Sheet Retrieving in Pallet-Less Handling

A fork truck attachment which retrives the load-carrying sheets used in pallet-less handling has been introduced by the Industrial Truck Division of Clark Equipment Co. The unit is named the "Model 5000 Sheet Retrieving Pul-Pac."

In the usual Pul-Pac, or pallet-less,

They're both blowguns, but...

each is in a class by itself . . . like Wyandotte's PURECAL® O

The *method* of use is the same for a pea shooter or a blowgun . . . but one is used in fun, and the other in deadly earnest. Makes all the difference in the world when you're on the receiving end!

In calcium carbonates, it's the *method* that makes the difference. And Wyandotte PURECAL O — the calcium carbonate that's in a class by itself — is precipitated by a special process which consistently yields agglomerate-free particles of cubical shape. It is a product of exceptional purity, uniformity, and whiteness.

One result: With PURECAL O, it is possible to prepare high-solids pigment slips that retain the low viscosity so essential to successful high-speed "on-the-machine" coating.

And PURECAL O offers you countless other advantages because of its unique physical properties. A thorough evaluation in your own laboratory will bring them to light — so write for samples and technical data, today. *Wyandotte Chemicals Corporation, Dept. 756-J, Wyandotte, Mich. Offices in principal cities.*

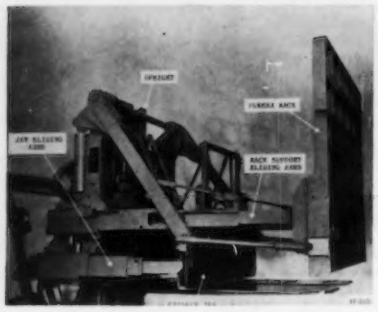
Wyandotte CHEMICALS MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

method of handling, the load-carrying sheet is pulled onto the truck's forks by a gripper jaw. Load removal is accomplished by a pusher rack which pushes the load and sheet off the forks.

The disadvantage of this system has been loss of the sheet at final destination, since there has been no method for pulling the sheet out from under its load.

Clark's Model 5000 Pul-Pac retrieves the sheet by either pulling the sheet from under its load or pushing the load off the sheet. To pull a load-carrying sheet onto the forks, the truck operator opens gripper jaws. This automatically connects the jaw and pusher rack so that they operate simultaneously. The pusher rack and jaw are extended to the desired point. The jaw is closed on the sheet. Pusher rack and jaw are retracted to pull sheet onto the forks. When pusher rack and jaw are fully retracted, the jaw automatically latches onto the main frame of the attachment, so that the pusher rack and jaw then operate independently of each other.



At unloading point, pusher rack is extended while jaw remains retracted and closed on sheet. This pushes the load off the sheet. Another way of unloading is to place load in the desired final position, with jaw gripping the sheet, and extend pusher rack. In effect, this pushes the fork truck away from the load.

All controls for these actions are hydraulically activated, with control levers placed on the fork truck cowl within easy reach of the operator.

The five operations performed with the attachment are:

1. Sheet retrieving operation.
2. Standard operation without sheet retrieving.
3. Standard pusher operation where load is pushed off forks, with no sheet required.
4. Regular fork truck operation with standard wooden pallets, with pusher rack and gripper jaw fully retracted.
5. Chisel fork truck operation, where load is picked up by sliding chisel forks under it, with pusher rack and gripper jaw fully retracted.

Optional equipment for the attachment includes a side-shifting device and a Plexiglas facing for the pusher rack. Further information may be obtained by writing Industrial Truck Division, Clark Equipment Co., Battle Creek, Mich.

If You Missed...

If you missed any of these articles which appeared in our October issues, you should have your own subscription to Paper Trade Journal.

American Box Board Utilizes Air Knife in Coating Bleached Food Board

Papermakers Get Facts on Felts at Three Day Session

New Paper Machine Winder Cuts Finishing Room Operations

New Coating Color Mixing Room at S. D. Warren

New Bowaters Plant is First Market Pulp Mill in South Carolina

Use of Control Valves at the Marathon Naheola Bleach Plant

Quality Control in Making Pulp

Role of Superintendent in Marketing Our Products

Hollingsworth and Vose Uses Acrylonitrile to Make Improved Paper

Owens-Illinois Opens New Corrugating Box Plant

Novel Slitting System Makes Its Bow at West Virginia Mill

New Dry Process Intrigues Deinkers

How to Decide When to Rebuild and When to Replace an Industrial Truck

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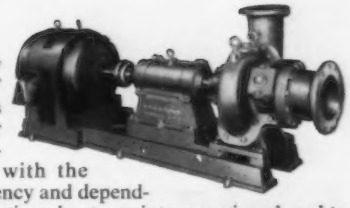
SELECT THE RIGHT PUMPS

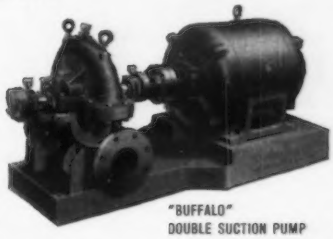


"BUFFALO" STOCK PUMP

You can rely on "Buffalo" Stock Pumps to move your high consistency stock with the utmost efficiency and dependability. Downtime due to maintenance is reduced to an absolute minimum. Now, thanks to design improvements, even routine servicing is more economical. These features tell you why: Optional suction spool piece (mounted on suction flange) facilitates maintenance. Maximum parts interchangeability cuts inventory and stock control costs. Service costs are reduced by diagonally-split casing and bearing stand. Taper-bored impellers give greater shaft strength plus easier servicing. Heavy water cooled thrust bearing and rugged alloy steel shaft contribute to long, maintenance-free life. For complete facts on "Buffalo" Stock Pumps, write for Bulletin 953-L.

"BUFFALO" SINGLE SUCTION PUMP

Reliable "Buffalo" Single Suction Pumps are widely used for severe service in the paper industry. Applications include: handling corrosive and non-corrosive liquids, viscous fluids and for general water supply systems. These husky, durable design features assure maximum life with minimum maintenance — oversize shafts, bearings, stuffing boxes — sturdy, heavy-duty impellers, casings, stands. For complete details on "Buffalo" Single Suction Pumps, write for Bulletin 976-G.



"BUFFALO" DOUBLE SUCTION PUMP

"Buffalo" Double Suction Pumps are ideally suited for white water, clear water and general paper mill service. "Buffalo" White Water Pumps are equipped with enclosed impellers. Lateral type casing wearing rings prevent costly breakdowns due to wedging of fibrous material. Heavy-duty components throughout insure peak efficiency with minimum maintenance costs. For full details on "Buffalo" Double Suction Pumps, write for Bulletin 955-S.

FOR YOUR JOBS FROM BUFFALO'S COMPLETE LINE FOR THE PAPER INDUSTRY

"Buffalo" manufactures a complete line of standard and alloy construction pumps engineered specifically for the paper industry. For complete information on the "Buffalo" Pumps tailored to your exact needs, call your nearby "Buffalo" engineering representative. Or write us direct for Bulletins.

"Buffalo" PUMPS

BUFFALO PUMPS DIVISION OF BUFFALO FORGE CO.

159 MORTIMER ST. BUFFALO, N. Y.

Canada Pumps, Ltd., Kitchener, Ont. • Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

PJT NEWS OF SUPPLIERS

LEFT TO RIGHT are: W. C. Lodding, president, Lodding Engineering Corp.; I. Meyer, Upper Montclair, N. J.; C. T. Connington, Jr., Barre, Mass.; H. Luke, Buffalo Rubber & Supply Co.; J. H. Glander, Maywood, N. J.; L. J. Schillo, Philadelphia, Pa.; D. M. Rauls, Garenville, N Y.; missing from photo is H. L. Ryer, Jr., Hudson Falls, N. Y.

LEFT TO RIGHT: E. C. Jacobi, Green Bay, Wis.; E. S. Greene, W. E. Greene Corp., N. Y.; C. B. Blanchard, Syracuse, N. Y.; F. P. Thornton, Jr., W. E. Greene Corp.; C. T. Connington, Barre, Mass.; R. P. Arnold, Buffalo Rubber & Supply Co.; L. A. Cole, Jr,. Jacksonville, Fla.; M. M. Calvert, New Orleans, La.; D. J. Milliken, General Manager, Lodding Engineering Corp; G. E. Soyka, Lodding consultant, and F. H. Goyette, Lodding chief engineer.

Lodding Engineering Corp. recently conducted two technical seminars for sales representatives of the company at its new Auburn, Mass., plant. The seminars were under the direction of George E. Soyka, George E. Soyka Associates, consultant for the company and F. Henry Goyette, Lodding's chief engineer.

In attendance were representatives of the W. E. Greene Corp., New York City, and the Buffalo Rubber and Supply Co., Buffalo, N. Y., who handle the sales of Lodding products throughout the United States, except in New England. New England sales are made through Charles T. Connington and his son.

The two identical seminars, spaced a week apart, were devoted to a concentrated study of paper mill white water systems and the related applications of the new Lodding Self Cleaning Showers.

Following the conference sessions those in attendance were given previews and detailed information on several new products currently under development in the company's pilot testing and development section of the plant.

Stowe-Woodward, Inc. announces that its Griffin, Ga., manufacturing division is now processing suction press roll covers for Southern paper mills. "It is the first time, to my knowledge," according to P. J. Mitchell, plant manager at Griffin, "that the covering of suction press rolls has been made available to Southern mills from a Southern plant. Our facilities are such that we are set up to handle all sizes and types of suction press covers."

Wyandotte Chemicals Corp., Michigan Alkali Division, has named Ken W. O'Connor resident sales representative in the Southwestern district effective October 1.

A graduate of the University of Texas with a B.B.A. degree, Mr. O'Connor spent two years in sales and public relations work following his army service in 1954. Immediately prior to joining Wyandotte, he was a sales representative for the Tubular Lining Corporation, suppliers to the Petroleum industry.

Mr. O'Connor's territory includes Texas and New Mexico. He will reside and operate from his home in Houston.

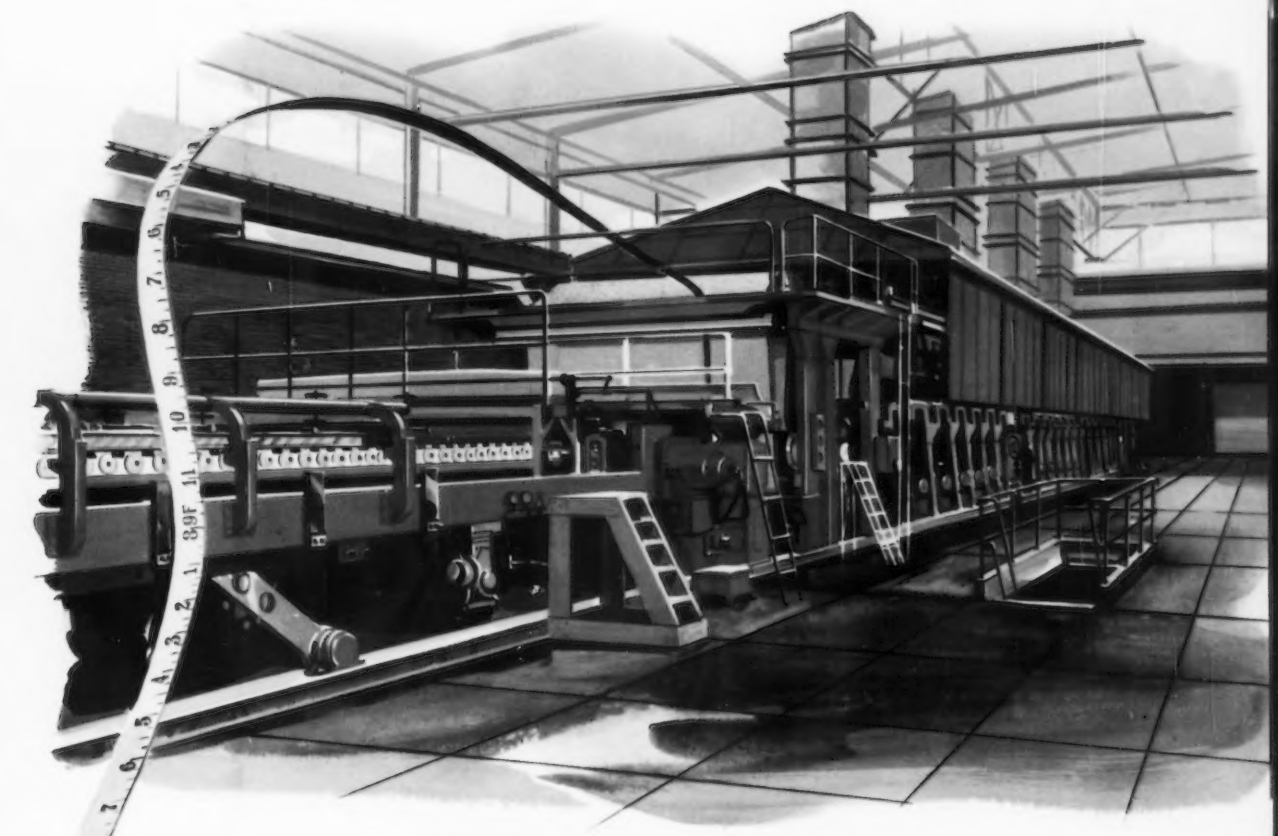
D. J. Murray Manufacturing Co., Wausau, Wis., and **Simonds Saw & Steel Co.,** Fitchburg, Mass., jointly sponsored a symposium on "Pulpwood Chipper Maintenance" and "The Care and Use of Knives in Paper Mills" in Wausau, October 15. Nearly one hundred individuals from 19 pulp and paper mills in northern central Wisconsin attended. Hosts for the meeting were A. W. Plier, president, D. J. Murray Manufacturing Co., and J. K. Fullerton, Chicago regional manager, Simonds Saw & Steel Co. The meeting was preceded by a plant tour.

Nopco Chemical Co. has appointed Emre Bleier a sales representative for the Industrial Division. Mr. Bleier replaces William J. Gavin, who has been made a regional sales manager; he will cover Mr. Gavin's former territory, which includes metropolitan New York; New Jersey; Philadelphia; Wilmington, Del.; and parts of Pennsylvania.

Mr. Bleier is a graduate of the College of The City of New York, from which he received a B. S. degree in chemistry. He also studied at the University of Pittsburgh, where he took courses in chemical engineering.

Testing Machines, Inc., has elected George W. Menkes vice president.

Mr. Menkes graduated from Fairleigh Dickenson College and, before joining his present firm, was with the United Motor division of General Motors. He has been employed as sales manager for the past four years.



Made to measure?

That's only half the story.

Consider the custom tailor. He studies his subject thoroughly, designs his tailoring to meet individual requirements and takes progressive measurements to assure a fine fitting garment.

Huyck does even more. Huyck studies all felts every step of the way from the sheep's back to the finished paper product including a careful evaluation of the machine performance of each Huyck felt.

This close scrutiny, literally from the cradle to the grave, spells the difference between ordinary performance and that of *new* Huyck felts.

HUYCK FELTS

Huyck Felt Co.,
Rensselaer, N. Y.;
Aliceville, Ala.;
Division of F. C. Huyck & Sons
In Canada: Kenwood Mills Ltd.
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NEW HUYCK FELTS ★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870

One of the important marketing functions of a waxed paper wrapper is to help the supermarket shopper identify her favorite brand.

TITANOX® helps her find her brand

Such identification is made easier by sharpening the contrast and legibility of the wrapper through white pigmentation. And the best effects are always achieved by the remarkable whitening, brightening and opacifying power of TITANOX white titanium dioxide pigments.

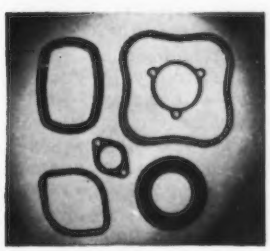
Not only food wrappers, but *all* types of paper products are better pigmented with TITANOX—the favorite brand of most papermakers. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

7168

Right at home in high temperature (700°F.) steam or gases . . . GARLOCK "900" gasketing

Available in sheet form or cut gaskets



For steam lines, valve bonnets, pumpheads and other gasket applications. Garlock "900" is made of long fibre Canadian asbestos and a special Garlock compound, bonded under pressure and vulcanized into a homogeneous structure. This sheet is strongly resistant to plastic flow under heavy bolt load, sufficiently compressible to compensate for reasonable unevenness or irregularities in the surfaces of flanged joints.

Available in sheet form, sizes from 40″ x 40″ to 120″ x 120″, thicknesses from 1/64″ to 1/4″. Gaskets in any size or shape can be cut from this sheet to meet customer specifications.

High temperature gaskets are more of "the Garlock 2,000" . . . two thousand different styles of packings, gaskets, and seals for every need. Discuss applications with your local Garlock representative. Call him or write for Gasket Folder AD-162.

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Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products

THE GARLOCK PACKING COMPANY, Palmyra, N. Y.

For Prompt Service, contact one of our 26 sales offices and warehouses throughout the U.S. and Canada.

Canadian Div.—The Garlock Packing Co. of Canada Ltd.
Plastics Div.—United States Gasket Co.

W. J. Mercier

W. E. Welch

D. O. Petterson

W. J. Barrett

W. H. Marshall

H. A. Pearson

The Wm. Powell Co., manufacturer of industrial valves, has announced the appointment of five new Powell sales engineers with extensive sales and engineering experience for territories throughout the United States. They are:

Wm. J. Mercier, Milwaukee, for Wisconsin and upper peninsula of Michigan, who was formerly with Dearborn Chemical Co.

Wm. E. Welch, Denver, for Colorado, Montana, Nevada, Utah and Wyoming, formerly with Ohio Injector Corp. and Reading-Pratt and Cady.

Wm. H. Marshall, San Francisco, for San Francisco and central and upper California, formerly with the Arabian American Oil Co., Pacific Can Co., and Gilmore Steel Co.

H. Alton Pearson, Ardmore, Pa., for Philadelphia, Chester, and eastern Pennsylvania, formerly with the Catalytic Construction Co., American Viscose Corp., Atlantic Refining Co., New York Shipbuilding Corp., Washington Naval Gun Factory, and American Engineering Co.

Donald O. Petterson, Tulsa, for Oklahoma, Kansas and part of Missouri, formerly with the Moorlane Co.

Stanley Steel Strapping, division of The Stanley Works, New Britain, Conn., has appointed William J. Barrett sales representative in its western New York and northwestern Pennsylvania territory.

He comes to Stanley from Manpower, Inc., of Buffalo, and previously was assistant to the plant manager of Spaulding Fibre Co. of Tonawanda for three years, and sales engineer for Gates Rubber Co. of Buffalo from 1952 to 1955.

Merrick Scale Manufacturing Co., Passaic, N. J., builder of continuous conveyor weighing and proportioning equipment, has appointed three new sales representatives in the United States and Cuba.

Robert H. Koelling Co., Dallas, Tex., will represent Merrick in eastern Texas and Oklahoma, while H. M. Rankin Associates of Clarkston, Mich., will handle sales in Michigan's lower peninsula for Merrick's line of "Weightometer" continuous conveyor scales and "Feedoweight" proportioning and blending units.

Oficina Consultora en Ingenieria, of Havana, will represent Merrick in Cuba. Raul Jidy will service the Merrick account.

Merrick equipment is used extensively in coal and mineral mining, rock and cement plants, power stations, sewage treatment plants, sugar refining, and many other industries requiring accurate records or control of the weight of conveyor-carried bulk materials.

Nalco Chemical Co., Chicago, manufacturer of industrial chemicals, has appointed James E. Starry district manager for its Texas district, with headquarters at Houston, it has been announced by Herbert S. Johnson, manager of Nalco's Industrial Division.

Mr. Starry succeeds William H. Rodewald who recently was named vice president and general manager of Nalco's subsidiary in Venezuela. He has been with Nalco since 1948. Most recently he was product manager of the coagulation chemical department of the company's industrial division in Chicago. Earlier he was a field representative and area manager in the Indiana district.

John T. Burke has been promoted from area manager in the Pittsburgh district to Mr. Starry's former post as product manager of the coagulation chemical department.

A UNIQUE CHECK VALVE THAT'S

UNSURPASSED IN WATER, AIR, OIL OR GAS SERVICE

SILENT • SEATLESS • LOW PRESSURE DROP

Technocheck©

OUTPERFORMS • OUTWEARS OTHER VALVES • COSTS LESS TO MAINTAIN

In field service in a wide range of water, gas, air and oil applications, Technocheck's performance and reliability are unsurpassed. Its exclusive design eliminates valve seats. Tight sealing, low pressure drop and long life with low upkeep are some of its important characteristics.

SCHEDULE OF STANDARD VALVE SIZES

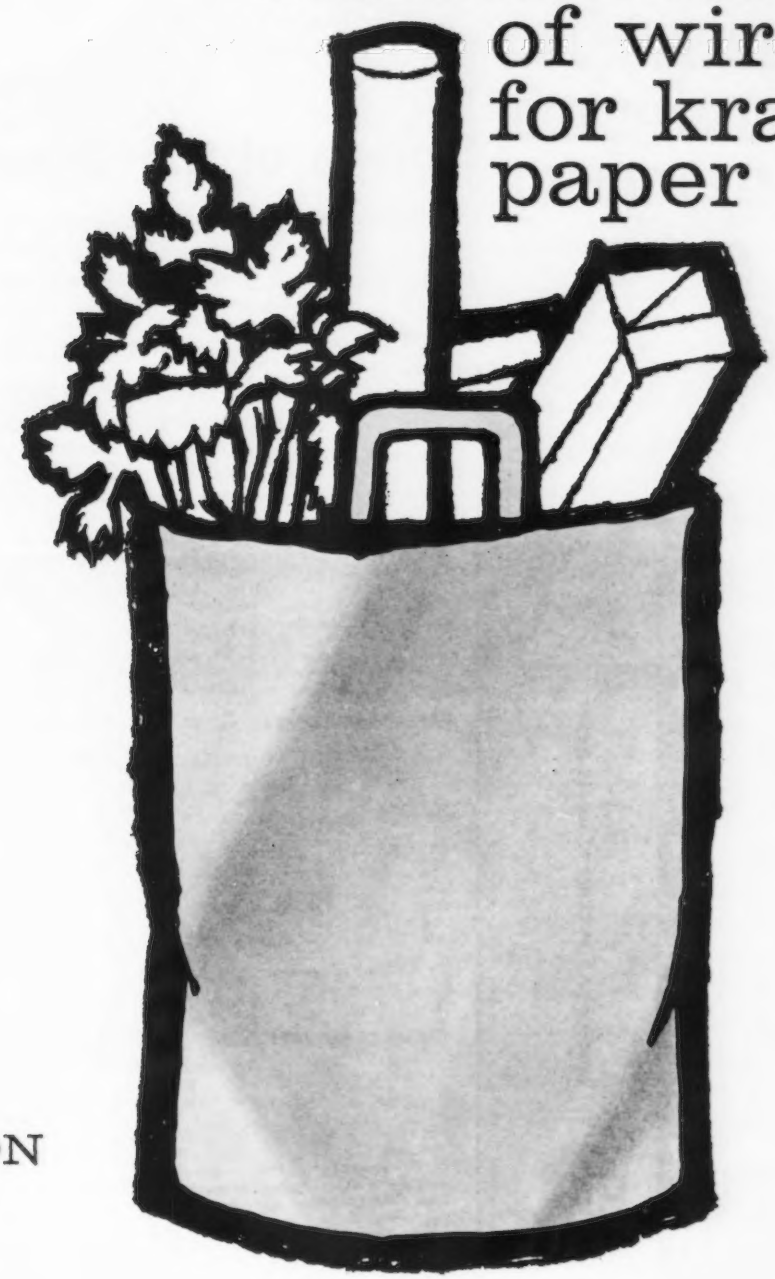
GENERAL DESCRIPTION	PSI	SIZES
Cast, Iron Flanged	125	4", 6", 8"
Steel, Male Threaded Ends	150	1½", 2", 2½", 3"
Steel, Flanged	150	3", 4", 6", 8"
PVC, Male Threaded Ends	125	1½", 2", 3"
PVC, Flanged	125	2", 3"
PVC, Flanged	50	4", 6", 8"

We invite inquiries on other sizes and in special materials.

Techno Corporation Dept. PTJ
16 West 5th Street, Erie, Pa.

A

a leading manufacturer of wires for kraft paper



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STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING
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Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.
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detroit
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PIONEER PAPER STOCK COMPANY
graders and packers of waste paper

OBITUARIES

John W. Vaile, 74, vice president of the T. J. Smith Box Co., Fort Smith, Ark., died October 18 at his home. He was a lifelong resident of Fort Smith.

Edward Fitzgerald, 66, a retired paper mill superintendent and native of Franklin, Ohio, died at 9:45 p. m., October 9, at Middletown Hospital. He had suffered a heart attack earlier in the day at his home.

Mr. Fitzgerald had been employed 26 years at the Franklin Board & Paper Co. He was a superintendent at the time he retired four years ago.

J. Raymond Levis, 65, president of John A. Levis & Sons, Inc., paper box manufacturers, Rochester, N. Y., died October 15. He entered business with his father, the late John Levis, and his brother, Gay R. Levis.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17
1959	98.5	97.1	97.3r	98.3r	95.5
	Sept. 20	**Sept. 27**	**Oct. 4**	**Oct. 11**	**Oct. 18**
1958	92.2	92.1	90.2	91.6	92.1

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2	94.4	95.3	95.6‡	84.6‡	96.0‡	92.3‡	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	90.5	93.3	91.6	95.0	98.4	91.1	86.3	91.7
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17
1959	98	97	97	98	98
	Sept. 20	**Sept. 27**	**Oct. 4**	**Oct. 11**	**Oct. 18**
1958	95	94	95	95	95

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	89	94	95	94	96	96	83	97	92	—	—	—	—
1958	84	86	87	84	85	86	76	93	90	95	93	77	86

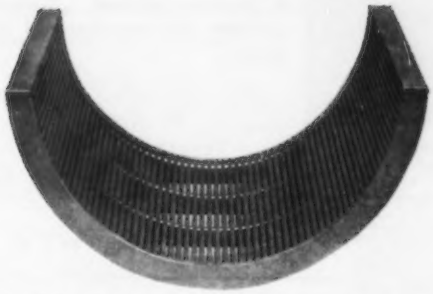
† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Oct. 17, 1959	LAST WEEK ENDING Oct. 10, 1959	CUMULATIVE TO DATE Jan. 1 to Oct. 17, 1959 incl.
% Activity	98%	98%	93%
TOTAL	332,662	331,221	12,706,700
Liner	124,415	122,606	4,418,402
Corrugating Material	50,719	51,413	1,932,260
Chip & Filler Board	5,061	4,607	206,784
Total Containerboard	180,195	178,626	6,557,446
Folding	57,544	58,165	2,276,304
Set-Up	13,311	14,424	485,986
Special Food Board	25,279	28,432	1,141,601
Other	56,333	51,574	2,245,363
Total Boxboard	152,467	152,595	6,149,254
Total Orders			
Received	285,609	376,006	
Unfilled End of Week	523,694	570,331	

REDUCE BLINDING

raise paper and pulp production



Hendrick Wedge Slot is made with small openings to assure fine screening. Yet, the special Wedge Slot construction affords far greater draining and screening capacity than many other types.

Here's another big plus: Wedge Slot's profile bars are "precision shaped" to maintain uniform width of slot openings the entire length of the screen as wear progresses.

To find out more about these special features of Hendrick Wedge Slot, write today.

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Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Hendrick Wedge Wire Screens • Architectural Grilles • Mitco Open Steel Flooring—Shur-Site Treads • Armorgrids • Hydro Dehazers • Distillation Column Internals.

ELIXMAN

CORES CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

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DeZurik Valves—

2-way, 3-way or 4-way—

THE *finest* PAPER MILL VALVES YOU CAN USE !

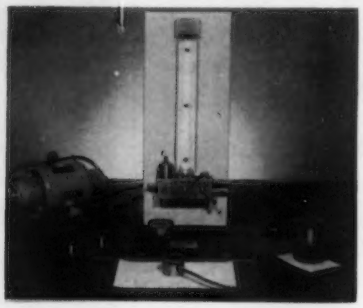
In straight-way or multi-port styles,
DeZurik Valves give you exactly
the advantages you want!
They operate easily—every time!
They shut dead tight. They're completely
free from constant, expensive maintenance.
And they last longer, too!

Write for details and recommendations

DeZURIK CORPORATION

SARTELL, MINNESOTA

THE
BENDTSEN TESTER
ONE Lightweight Machine That Tests
PAPER & PAPERBOARD
for
SMOOTHNESS . . . POROSITY . . . HARDNESS
Instantaneously
Sole Distributors



INSTANTANEOUS: No waiting—No scale adjustments.
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VERSATILE: Completely self contained, portable, no special training required. Tests smoothness, porosity & printing hardness. Accessories available for paperboard & hardboard.

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Seaboard Air Line
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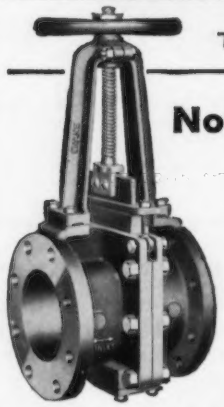
SEABOARD AIR LINE RAILROAD
Through the Heart of the South



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Non-Clogging
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In All Patterns and Sizes
Order from Your Local
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POSITIVE
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FOR SALE—$1.25 a line. Minimum charge $5.00.
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Classified advertising space may also be purchased at $7.00 per single column inch. All classified advertisements are payable in advance.
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Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 49 West 45th Street, New York 19, N. Y.

Help Wanted

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$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

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6 East Monroe, Chicago ANdover 3-1970

KRAFT PAPER MILL MANAGER

Mature, experienced specialty kraft paper maker with technical education or equivalent background wanted to manage high quality 2-machine Midwestern kraft paper mill located near a large city. Mill uses 100% purchased pulp, mostly Scandinavian.

He should be able to operate virtually independently with a minimum of supervision. This is an outstanding opportunity for the correct man. Remuneration, including pension and fringe benefits, depend upon experience and potential. All replies will be held confidential.

Please send full particulars including age, education, past and present experience, grades run and any other appropriate data to

Address Box 59-296 care Paper Trade Journal.

N-16

WANTED TOUR BOSS

Subsidiary of major paper company needs a Tour Boss for one machine, high speed folding boxboard mill. Location—New England. Excellent benefits. Reply to Box 59-310 care Paper Trade Journal.

N-2

Help Wanted

POSITIONS OPEN

WE CAN PLACE—Night Supt. kraft papers; supt. set up box board mill; head accountant $10,000 year or better.

Chemists—chem. engineers for mills and for demonstrating and selling.

Mechanical, project, plant, time study and industrial engineers; two Fourdrinier mach. tour bosses; head millwright.

SEND US YOUR RESUME. Attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

CHARLES P. RAYMOND SERVICE, Inc.
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WORKING FOREMAN wanted for Paper Mill located in New Jersey. Must be experienced on Guillotine and Rotary Sheeter.

Salary and Bonus

Reply giving full particulars to P. O. Box 387, Trenton, N. J. N-2

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MAINTENANCE ENGINEER

Opportunity to develop and control a maintenance program suited to highly modernized production machines.

Medium size Tissue Mill located Mid Atlantic Area. Affiliated with major consumer goods manufacturer.

Real growth potential for man who can direct shirt sleeve maintenance as well as a progressive engineering program.

Top benefit program. Salary negotiable.

Address Box 59-309 care Paper Trade Journal. N-9

WANTED

For 500 ton Kraft linerboard mill being built at Counce, Tennessee. Mill is located on Tennessee River just below Pickwick Dam, an area of pleasant living conditions with excellent recreational facilities. Mill is scheduled for operation January 1, 1961; however, we wish to fill the following positions immediately so that the men chosen can be in on the planning and installation stages.

POWER SUPERVISOR—Must be able to plan and organize Power Department; help select and train men; plan and direct efficient and safe operation of power and recovery boiler and related equipment. Will supervise combination gas and bark fired boiler and large recovery unit. Will report to Pulp Mill Superintendent. This position offers excellent opportunity for a competent power man to increase his knowledge of pulp mill operations, or to grow in the power plant field, as the mill expands.

INSTRUMENT SUPERVISOR—Must be able to plan and organize Instrument Department; help select and train men; supervise, plan and direct installation and maintenance activities of the department. Knowledge of current Kraft mill instrumentation is essential. Will report to Plant Engineer. This is an opportunity for a thoroughly experienced man to help select and install instrumentation and man a modern new mill.

Only well qualified men with Southern experience will be considered.

TENNESSEE RIVER PULP & PAPER COMPANY
P. O. BOX 33
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Require several years responsible charge of engineering applicable to processing of fibers to structural, insulation, acoustical and like products. Registered professional engineer desired with imagination tempered with experience.

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Box 59-300 care Paper Trade Journal. N-16

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Downingtown single cylinder; 99″ face x 48″ dia.; 18″ dia. couch

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1—156″ face w/gear and steam joint
28″ Dia.:
3— 70″ face w/gears & bearings
3— 73″ face w/gears & bearings
3— 76″ face w/gears & bearings
3— 77″ face w/gears & bearings
2— 84″ face
2— 84″ face w/accessories
1—160″ face w/rope carriers
36″ Dia.:
1— 42″ face
2— 44″ face
2— 46″ face
22— 54″ face; complete section
4— 70″ face w/gears & bearings
11— 72″ face w/gears & bearings
1— 74″ face Lukenweld w/A-F Brng
1— 74″ face w/gears & bearings
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9— 76″ face w/gears & bearings
1— 77″ face w/gears & bearings
1— 78″ face w/gears & bearings
2— 80″ face
5— 84″ face
3— 88″ face
18— 90″ face; complete section
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10—160″ face
42″ Dia.:
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1—110″ face
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1—120″ face
1—160″ face
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57— 46″ face; chrome plated
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1— 82″ face w/gears & bearings
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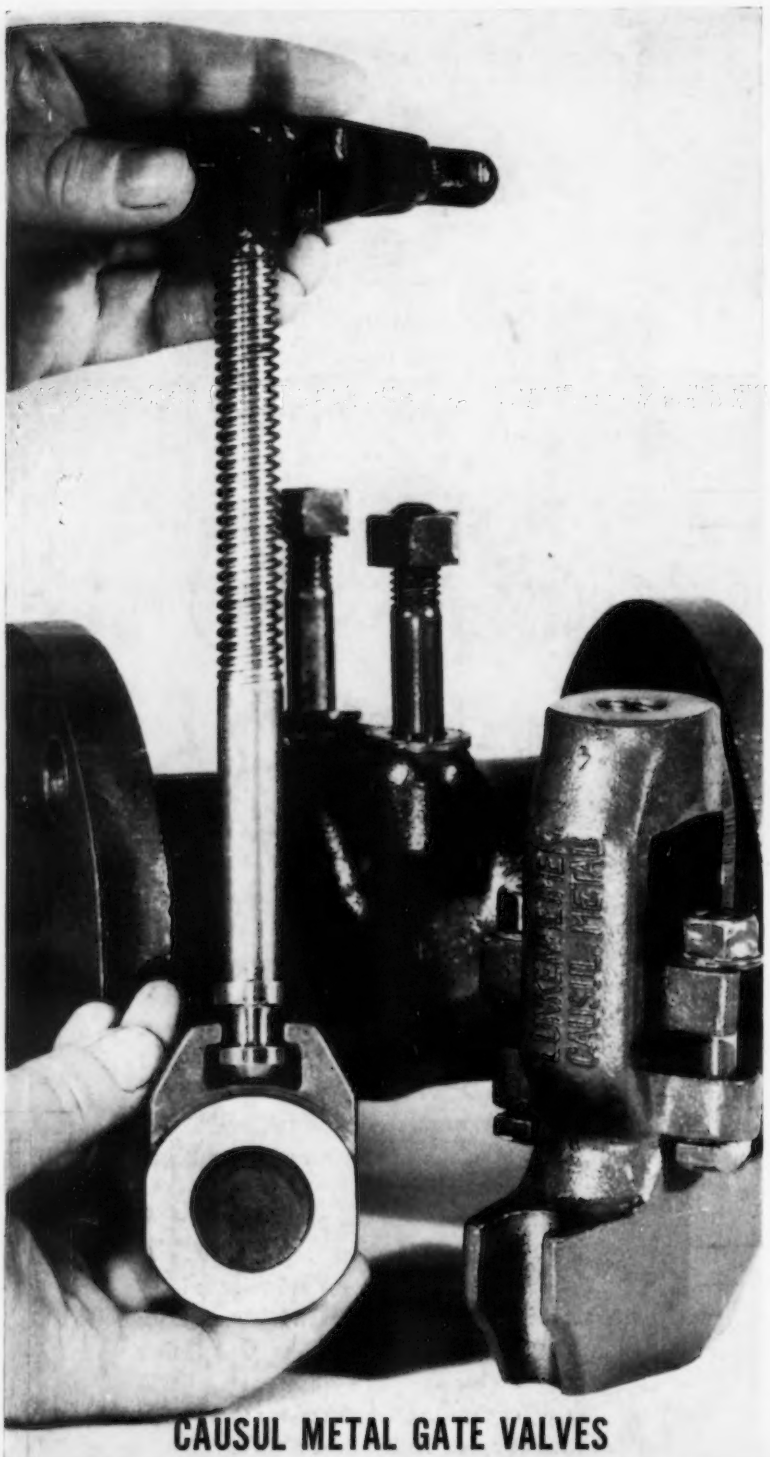

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